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GOVERNMENT OF THE PHILIPPINES
DEPARTMENT OF PUBLIC HEALTH
PHILIPPINE HEALTH
—

REPORT OF THE
PHILIPPINE HEALTH
SERVICE

FOR THE FISCAL YEAR FROM JANUARY 1
TO DECEMBER 31, 1919

VICENTE DE JESÚS, M. D.
DIRECTOR OF HEALTH

MANILA
BUREAU OF PRINTING
1920

THE GOVERNMENT OF THE PHILIPPINE ISLANDS
DEPARTMENT OF PUBLIC INSTRUCTION
PHILIPPINE HEALTH SERVICE

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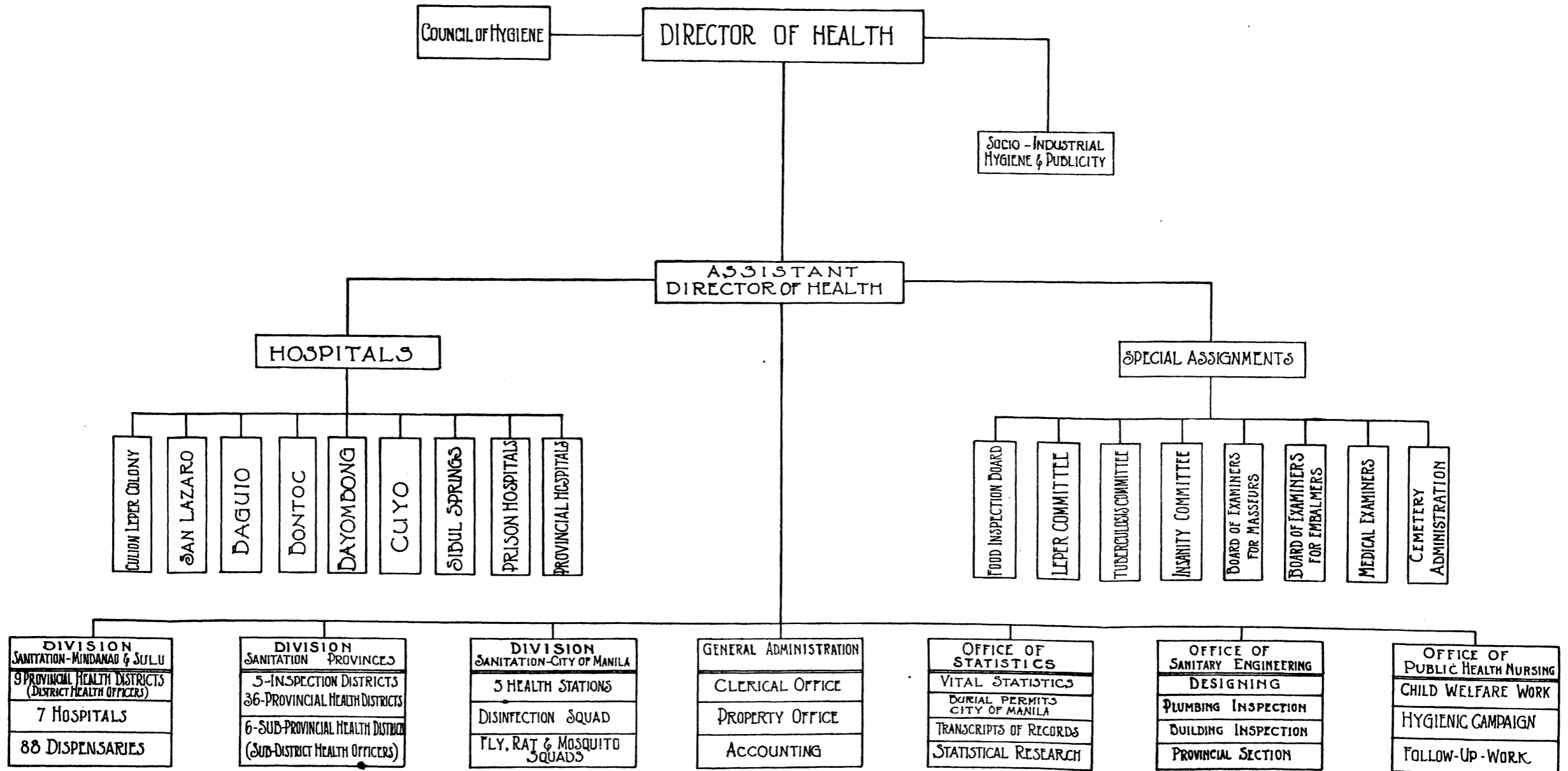
VICENTE DE JESÚS, M. D.
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1920

CHART OF PRESENT ORGANIZATION

PHILIPPINE HEALTH SERVICE

1919



ANNUAL REPORT OF THE PHILIPPINE HEALTH SERVICE, FISCAL YEAR 1919

DEPARTMENT OF PUBLIC INSTRUCTION,
PHILIPPINE HEALTH SERVICE,

MANILA, October 7, 1920.

SIR: I have the honor to transmit herewith the annual report of the Philippine Health Service for the fiscal year ending December 31, 1919.

THE YEAR IN BRIEF.

As in the case of other abnormal years, the greater portion of the activities of the sanitary personnel was devoted to the eradication of dangerous communicable diseases. Many practical returns may, however, be credited to the record of the year 1919.

The epidemics of influenza, smallpox, and cholera, which were brought over from 1918, were finally placed under control during 1919. Six other provinces were organized into sanitary divisions, thus placing most of the territorial area of the Islands under a uniform health organization. Preliminary studies were made for the improvement of the treatment against leprosy, for the introduction of anticholera vaccination, and toward the reorganization of the Insular, provincial and municipal health services upon a basis of centralization, adequate appropriations and full-time health officers, such as the new public health requires. On the other hand, the routine work of the Service was carried on, as usual, in a satisfactory manner, its various divisions coöperating splendidly, and officers and employees alike manifesting, almost without exception, real interest and enthusiasm in the work of the Service.

VITAL STATISTICS.

The presence of cholera, bacillary dysentery and smallpox during the earlier part of the year kept the general death-rate high. There was an improvement, though, over the death and infant mortality rates of the previous year, while, on the other hand, an actual decrease in the birth-rate has been noted in the provinces, which was really an after-effect of the heavy tolls exacted upon the adult population by bacillary dysentery, influenza, and cholera, during 1918 and 1919. The decrease of

infant mortality in Manila has been steady during the last few years, but the decrease noted during 1919 has been exceptionally large, and was brought about by the combined influence of private and Government infant welfare agencies, and the widespread acceptance and application amongst mothers of sensible ways of caring for and feeding of infants. It has also decreased to a certain extent in the provinces, and in Mindanao and Sulu.

The crude death-rate for 1919 decreased from 39.33 as was registered during 1918 to 29.22 per 1,000, while the birth-rate decreased likewise from 31.84 as registered for the previous year to 30.72, resulting in an apparent surplus of 16,222 deaths over the total births.

The comparative vital statistics for 1912 and 1919 is given below:

Vital statistics for the years 1918 and 1919.

Year.	Locality.	Popula- tion. ^a	Mortality.		Natality.		Infant mortal- ity. Rate per 1,000 births.
			Total deaths.	Death- rate.	Total births.	Birth- rate.	
1918	Manila	281,599	12,369	43.92	9,083	32.26	397.56
	Provinces ^b	8,183,377	329,448	40.25	319,175	39.00	255.40
	Mindanao	542,844	17,087	31.47	13,075	24.08	343.78
	Totals ^c	9,007,820	358,904	39.33	341,333	31.84	332.22
1919	Manila	285,621	7,814	27.36	10,029	36.11	224.95
	Provinces ^b	8,297,041	303,275	36.55	285,460	34.40	226.88
	Mindanao	558,372	13,262	23.75	12,650	30.72	269.09
	Totals	9,141,034	324,351	29.22	308,129	30.72	240.30

^a Computed on census of 1903 and 1918 by arithmetical method.

^b Including thirty-five provinces out of a total of thirty-six.

^c Figures given somewhat at variance with those appearing in annual report for 1918, owing to correction and revision made necessary by inclusion of later data not included therein.

Caution should be exercised in studying the figures appearing on this table, and to the end that proper allowances may be made, separate data are given for the city of Manila, for the provinces, and for the territory included within the Department of Mindanao and Sulu. The registration of deaths and births in Manila is quite accurate and in a like degree, the same may be said for death registration in the provinces, where, on the other hand, the number of births reported is always less than the actual number of babies born. The registration of vital statistics is fairly accurate in regularly constituted municipalities of Mindanao, but hardly so in localities peopled by pagans and Moham-medans.

APPROPRIATIONS AND EXPENDITURES.

The Insular appropriations for the year amounted to ₱2,540,536 (\$1,270,268). This sum does not include the ap-

proportions set aside by provinces and municipalities for health purposes, in the amount of ₱868,041.40 (\$434,020.70), giving a grand total of ₱3,408,577.40 (\$1,704,288.70), which, computed on the present population of the Islands (10,350,640), gives a rate of thirty-four centavos per capita.

It is obvious that such a per capita rate is much too small for the requirements of an up-to-date health department. Still, it is a source of gratification for the Service that the Insular budget makers should see fit to increase the health appropriations every successive year. The Insular appropriations for 1917 and 1918 were respectively ₱1,208,086 and ₱1,672,930, while those for 1920 have been set to ₱3,035,694, an increase of appropriations amounting to 180 per cent during the last four years.

After all is said, the fact remains that larger appropriations are needed by the Service if the present standard of efficiency is to be increased, or even maintained. The reorganization of its administrative divisions along the lines required by modern hygiene, the employment of full-time officers and the centralization and unification of the Insular, provincial and municipal health agencies call for more adequate appropriations and larger expenditures, up to the point at least, where the rate is brought to one peso per head.

The expenditures during 1919 amounted to ₱2,410,616.22. The following is a correct statement of the expenditures of the Philippine Health Service during the year, duly classified and itemized:

**COMPARATIVE STATEMENT OF EXPENDITURES
FISCAL YEAR 1919.**

BY CLASSIFICATION.

Salaries and wages.....	₱729,440.47
Bonuses	104,042.67
Traveling expenses of personnel.....	98,263.92
Freight, express and delivery service.....	25,046.98
Postal, telegraph, telephone, and cable service.....	8,787.25
Illumination and power service.....	17,532.94
Contingent expenses	16,988.86
Rentals of buildings and grounds.....	2,869.35
Consumption of supplies and materials.....	1,235,033.70
Printing and binding.....	13,116.48
Traveling expenses of non-Government employees.....	39,903.65
Cash, contribution and gratuities.....	55,090.80
Plant equipment and repair service.....	8,591.49
Outlays to buildings, furniture and equipment.....	55,697.14
Deterioration of supplies and sales stock.....	210.52
Total.....	2,410,616.22

Comparative statement of expenditures, Fiscal Year 1919.—Continued.

BY DIVISIONS.

Administrative Division.....	211,820.81
Sanitary Engineering Office.....	19,626.97
Disease and Pest Campaign.....	24,001.44
Culion Leper Colony.....	892,634.17
Culion Store, Culion Leper Colony.....	1,157.93
Vaccination Division.....	268,797.07
San Lazaro Hospital Division.....	468,059.58
Segregation of lepers.....	7,833.07
Baguio Hospital Division.....	53,951.83
Sibul Springs Sanitarium.....	2,878.82
Sanitation, city of Manila.....	179,207.31
District Nursing.....	12,570.65
Provincial Sanitation.....	160,087.06
Health Publicity Campaign.....	24,687.29
Administrative, Department of Mindanao and Sulu.....	83,302.22
Total.....	2,410,616.22

SALARIES AND WAGES.

Administrative Division.....	₱77,912.64
Sanitary Engineering Office.....	14,928.91
Disease and Pest Campaign.....	8,713.27
Culion Leper Colony.....	53,399.67
Culion Store, Culion Leper Colony.....	479.34
Vaccination Division.....	122,034.58
San Lazaro Hospital.....	90,461.74
Baguio Hospital.....	11,889.82
Sibul Springs Sanitarium.....	1,940.32
Health Publicity Campaign.....	12,083.93
Sanitation, city of Manila.....	103,940.51
District Nursing Division.....	6,032.21
Provincial Sanitation.....	112,279.16
Administrative, Department of Mindanao and Sulu.....	43,478.74
Segregation of Lepers.....	2,240.57
Commutation, subsistence, quarters and laundry:	
Disease and Pest Campaign.....	101.28
San Lazaro Hospital.....	5,370.12
Baguio Hospital.....	845.49
District Nursing.....	4,340.55
Ten per cent Culion Service (C. L. C.).....	556.35
Sursalaries, Provincial Sanitation.....	7,402.20
Sursalaries, Administrative, Department of Mindanao and Sulu.....	2,800.00
Accrued leave.....	26,209.07
Total salaries and wages.....	729,440.47

1941 1942 1943

1944 1945

1946 1947

1948 1949

1950 1951

1952 1953

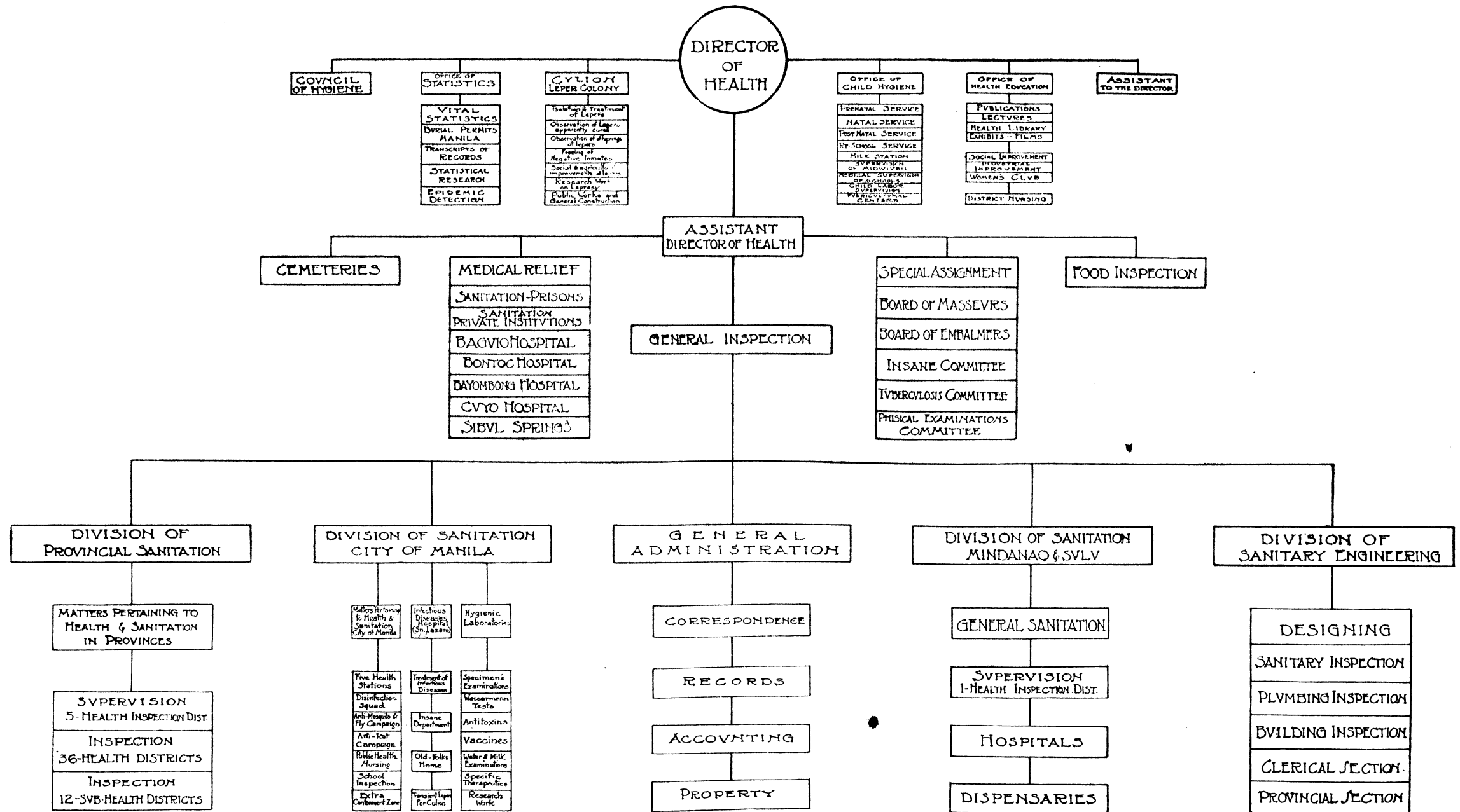
1954 1955

1956 1957

1958 1959

1960 1961

DIAGRAM OF THE PROPOSED REORGANIZATION OF THE PHILIPPINE HEALTH SERVICE FOR THE YEAR 1920



*Comparative statement of expenditures, Fiscal Year 1919.—Continued.***RENTALS OF BUILDINGS AND GROUNDS.**

Health Publicity Campaign:	
Rental of buildings proper.....	130.00
Sanitation, City of Manila:	
Rental of buildings proper.....	2,000.00
Sibul Springs Sanitarium:	
Rental of buildings proper.....	60.00
Culion Leper Colony:	
Rental of buildings proper.....	500.00
Administrative, Department of Mindanao and Sulu:	
Rental of buildings proper.....	100.00
Baguio Hospital Division:	
Rental of Superintendent's quarters.....	79.35
Total.....	2,869.35

BONUSES (SALARIES, OFFICERS AND EMPLOYEES.)

Administrative Division.....	₱12,376.92
Sanitary Engineering Office.....	2,264.15
Disease and Pest Campaign.....	1,058.84
Culion Leper Colony.....	7,077.48
Vaccination Division.....	3,107.65
San Lazaro Hospital.....	11,573.04
Baguio Hospital.....	2,332.15
Sibul Springs Sanitarium.....	389.67
Health Publicity Campaign.....	1,652.67
Sanitation, city of Manila.....	19,000.87
District Nursing.....	1,354.19
Provincial Sanitation.....	18,803.28
Administrative, Department of Mindanao and Sulu.....	8,885.95

BONUSES (WAGES, EMPLOYEES.)

Administrative Division.....	1,136.81
Sanitary Engineering Office.....	40.42
Culion Leper Colony.....	2,849.55
Segregation of Lepers.....	560.15
San Lazaro Hospital.....	8,144.86
Baguio Hospital.....	394.95
Sibul Springs Sanitarium.....	87.50
Administrative, Department of Mindanao and Sulu.....	831.74

Total bonuses (Salaries and Wages, officers and employees)	104,042.67
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REORGANIZATION.

No organic changes were introduced in the service during the period covered by this report.

The need, however, for a complete reorganization of the administrative division as well as the creation of new activities in line with the latest developments of preventive medicine and

health administration had become necessary. Under the proposed reorganization, there will be five divisions as follows: Division of Provincial Sanitation, of Sanitation, city of Manila, of General Administration, of Sanitation, Mindanao, and Sulu and of Sanitary Engineering. The activities of each of the above divisions are graphically shown in the diagram inserted below. These divisions will be under the general inspection and supervision of the Assistant Director and Director of Health respectively. The following activities will be under the immediate charge of the Assistant Director of Health: Cemeteries, Medical Relief, including the sanitation of prisons, hospitals and sanitariums, the Boards of Masseurs, of Embalmers, the Committees on the Insane, Tuberculosis and Physical Examinations and Food Inspection. The Director of Health will supervise directly the following offices: Statistics, Culion Leper Colony, Child Hygiene, Health Education, and Council of Hygiene. Statistical research and epidemiology have been added to the activities of the Office of Statistics, and research work on leprosy has been introduced in the Culion Leper Colony. The Office of Child Hygiene is a new creation and groups under one office related activities such as Prenatal, Natal and Post-natal Services, School Services, Milk Stations, Supervision of Midwives, Medical Supervision of Schools, Child labor and Puericultural Centers. The Office of Health Education will take charge of all the publications of the Philippine Health Service, lectures, the Health Library, Exhibits, Social and Industrial Improvements, Women's Clubs and District Nursing. Of importance in connection with the proposed reorganization is the establishment of hygienic laboratories under the supervision of the Chief of Division, Sanitation, city of Manila and will undertake all the clinical, bacteriological and biological examinations for the Health Service, the Wassermann tests, the preparation of antitoxines and vaccines and other biological products and engage in research work to solve many of the hitherto obscure problems in public health. The provincial section is an important addition to the Division of Sanitary Engineering. Buildings will now be built providing for the best light and ventilation and modern plumbing will undoubtedly be introduced in many otherwise progressive communities. The provision of district inspectors in the present scheme under the Division of **Provincial Sanitation** will materially increase the efficiency of district health officers by having their work under constant supervision. Such a reorganization will insure the highest grade of efficiency, will

prevent duplication of work and will place the Insular, provincial, and municipal health organizations upon a basis of a unified and centralized administration. It will necessitate, though, the employment of full-time municipal health officers and the standardization of salaries of provincial and municipal sanitary employees, and, as a corollary, the appropriation of larger amounts, and the enactment of legislation to cover the proposed innovations.

From a financial standpoint, the reorganization will not cause a heavy burden upon the public treasury, inasmuch as it will not entail at the beginning but an increase of the per capita rate from thirty-four to fifty centavos, an easy task after all considering that an Insular health fund could be created out of Insular, provincial and municipal health appropriations.

PERSONNEL.

The shortage and depletion in the medical personnel of the lower grades of the commissioned service, mentioned in the report for the previous year, subsist up to the writing of the present report for exactly the same reasons as have been enumerated then; namely, the curtailing of private practice from officers drawing ₱3,000 or more per year; the low standard of salaries provided for said grades, and the unwillingness of young physicians to enter a career where the pecuniary returns are indeed meager. The shortage has been felt in a keener degree in Mindanao and Sulu, due to the peculiar conditions obtaining in that part of the country—isolation, enforced separation from home, work among pagans and Mohammedan peoples—driving away from young physicians the desire to serve there.

RESIGNATIONS.

Manuel Ramirez	Medical Inspector.
Marcelino Asuzano.....	Senior Surgeon.
Hilarion T. Feliciano.....	Assistant Surgeon.
José Zárraga.....	Assistant Surgeon.
Dalmacio Jugueta.....	Assistant Surgeon.
Pedro Reyes	Assistant Surgeon.

TRANSFERS.

Surgeon Emilio Bulatao to Philippine University.
Assistant Surgeon José Gonzales to Philippine Constabulary.

DEATH.

Luis Caballero	Senior Medical Inspector; died August 12, 1919.
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PROMOTIONS.

From medical inspector to senior medical inspector:

Gabriel Intengan.
Francisco Lopez Lubelza.
José P. Bantug.
Fernando Gonzales Sioco.

From senior surgeon to medical inspector:

Manuel Ramirez.
Pacifico Laygo.
Felipe Arenas.

From surgeon to senior surgeon:

Marcelino Asuzano.
Juan S. Fernando.
Eufemio Jara.

NEW APPOINTMENTS.

Domingo Tablan	Assistant Surgeon.
Bartolome Gella.....	Assistant Surgeon.
Donato S. Juan.....	Assistant Surgeon.

EPIDEMIC DISEASES.

During the year, smallpox in epidemic form invaded with special severity the provinces of central and southern Luzon, and those of the Visayas group. Outbreaks of cholera in a more severe form than in 1918 occurred in Manila and in the provinces throughout the year, appearing in epidemic form in the Province of Pangasinan during June. Bacillary dysentery was likewise present in sporadic and epidemic forms. The occurrence of these diseases constituted the salient epidemiological features of 1919.

SMALLPOX.

Locality.	1918		1919	
	Cases.	Deaths.	Cases.	Deaths.
Manila.....	1,326	869	57	39
Provinces.....	33,092	14,092	60,612	43,294
Mindanao and Sulu.....	12,951	1,486	4,511	1,075
Total	47,369	16,447	65,180	44,408

The smallpox epidemic of the year was an extension of the epidemic of 1918.

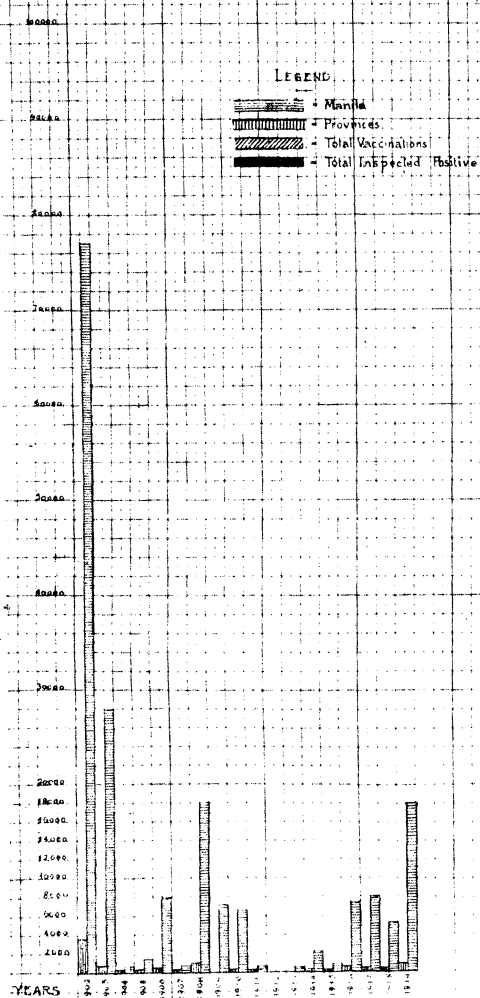
The city of Manila was comparatively free from the disease, only 57 cases occurring therein during the first six months of the year. No cases occurred during the second half.

The provinces, however, suffered severely, but the epidemic was finally put under control during the month of October. At the close of the year, ten provinces remained infected with the disease in sporadic form. The provinces of Misamis and Su-

PHILIPPINE HEALTH SERVICE

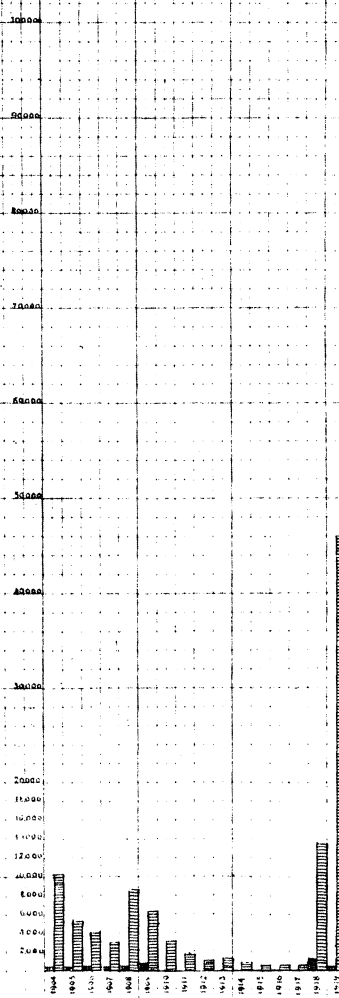
MORTALITY FROM CHOLERA

MANILA & PROVINCES BY YEARS

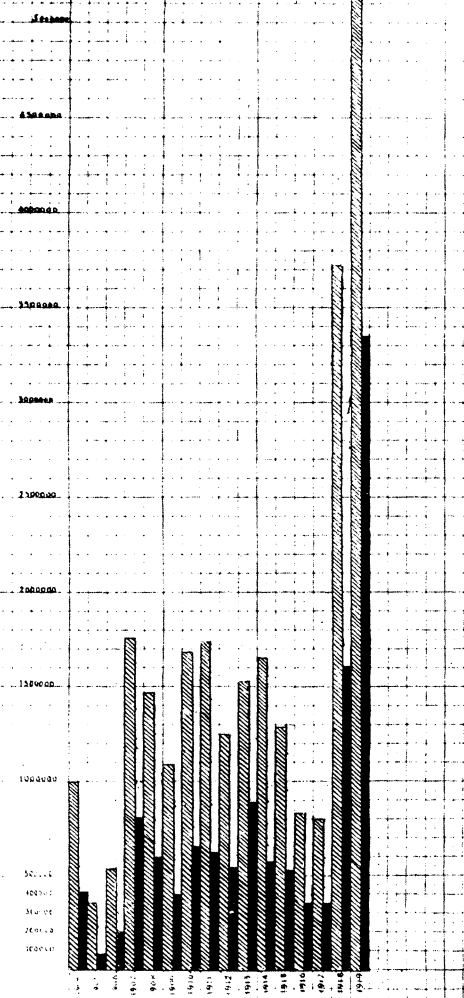


MORTALITY FROM SMALLPOX

MANILA & PROVINCES BY YEARS



VACCINATIONS IN THE PHILIPPINES BY YEARS



rigao in Mindanao were heavily affected also and remained infected with sporadic cases up to the beginning of 1920.

Vaccination was carried on as extensively as in the preceding year. In the city of Manila, 360,712 vaccinations were performed with 53 per cent of positives. In the provinces, six vaccinating parties, each consisting of twenty vaccinators in charge of a physician, were organized to coöperate with the local health organizations. Besides, 250 vaccinators were detailed in various provinces as special aid in the vaccination campaign. Approximately 7,670,252 vaccinations were performed, resulting in 3,405,092 positives.

A graphic presentation of the smallpox situation between 1902 and 1919 is given on the chart facing page 10.

CHOLERA.

Locality.	1918		1919	
	Cases.	Deaths.	Cases.	Deaths.
Manila	182	123	861	352
Provinces	6,236	4,605	24,337	17,261
Mindanao and Sulu.....	2,565	1,612	239	169
Total	8,983	6,340	24,576	17,537

At the close of the year 1918, several provinces remained infected with cholera, the Province of Pangasinan being the one most seriously affected. Here the situation seemed to improve during the first quarter, and up to May, but a recrudescence of cases occurred during June, and the scattered outbreaks became a veritable epidemic. An average of one hundred cases daily occurred during August. Emergency physicians and nurses were rushed to aid the local health officers, and through their combined efforts and with the establishment of isolation hospitals, the epidemic was stamped out in forty-five days time. A total of 6,730 cases and 5,013 deaths were reported in the province during the epidemic. The infection in the provinces of Bulacan, Laguna, Pampanga, and Tayabas was also quite severe, but neither in these provinces nor elsewhere did the situation assume the proportions of a wide-spread epidemic.

Sporadic cases were registered in the city of Manila during the first six months of the year. A recrudescence of cases occurred in July, the infection remaining heavy throughout the months of August and September. The incidence dwindled beginning from October. Only five cases were reported during December.

A few light outbreaks occurred in Mindanao and Sulu, but there the disease failed to gain headway.

No special nor new developments in the epidemiology of cholera were observed during 1919. The experience gained served only to emphasize such well-known points as:

(a) The importance of contact-infection in the spread of cholera.

(b) The need for safe water supplies and sanitary disposal of feces as a precautionary measure against the disease.

(c) The carriers as factors of propagation and explosion.

(d) The importance of isolation hospitals, in lieu of house quarantine, and as a measure to minimize contact-infection and to secure maximum reduction of mortality.

(e) The need for prompt detection of the first cases of an outbreak.

(f) The importance of educative measures in cholera campaigns.

DYSENTERY.

A total of 60,169 cases and 18,191 deaths were reported during the year, distributed as follows: Manila 737 cases 414 deaths; provinces, 58,410 cases 17,523 deaths; Mindanao and Sulu, 1,022 cases 254 deaths.

The morbidity and mortality from the disease was heavy in the provinces. As a matter of fact, dysentery caused more deaths than cholera, but the local health officers and the people themselves did not seem to consider the malady as a serious matter. Hence the rapid spread in localities invaded and the large mortality recorded therefrom. If anything has been gained from the dysentery record of 1919, disgraceful as it was, it will be in the form of a popular awakening with regard to the gravity of dysentery as an epidemic disease, and a disposition to place same alongside of cholera and smallpox as dangerous communicable diseases.

OTHER COMMUNICABLE DISEASES.

INFLUENZA.

Cases of influenza were registered during the first quarter of the year. They were but residual cases of the epidemic of 1918, and caused little mortality comparatively, the disease appearing to have lost the extraordinary diffusibility powers exhibited during the previous year.

TYPHOID FEVER.

No appreciable change has been noted in the typhoid situation, the rates of morbidity and mortality having remained practically the same as those of the previous year. A more extensive use of antityphoid vaccine has been made, and the detection of

carriers has become a routinary health measure for all known cases of typhoid fever.

TUBERCULOSIS.

The steady inroad being made by this disease noted for some years past has gone on during the year. It has become a great scourge in these Islands as it has among all civilized countries and races. Running second to malaria, as has been stated on other occasions, it certainly constitutes a sanitary problem of the most serious character.

The death rate from tuberculosis in the Philippine Islands has been shown to be 2.64 per thousand of the population. This means, computed on the population of the Census of 1918, about 27,000 deaths from tuberculosis per year. In 1902, tuberculosis constituted 9 per cent of the total mortality. Lately, it has been found to constitute over 21 per cent. The above is sufficient to show the absolute and urgent necessity of further and more effective measures being taken to control the spread of the disease. But tuberculosis will not be eradicated unless every case is reported, isolated and controlled. Education plays an important rôle in the prevention of tuberculosis, just as social and industrial conditions determine the lines of the spread of infection. Such considerations should serve as pointers in all anti-tuberculosis relief and eradication work.

MALARIA.

The yearly increase of malaria has also been progressive. The provinces reported 33,444 deaths during 1919. 18,070 cases were treated in various dispensaries of the service operating in Mindanao and Sulu, with a mortality rate of 10.40 per cent. In non-epidemic years, malaria heads the list of the most common causes of death. Preventable and wide-spread as it is, malaria, similarly to tuberculosis, is a problem of national import. Aside from the economic losses from deaths therefrom, it affects the national assets in man-power and productivity by causing prolonged illness and invalidism and by indubitably lessening the earning capacity of the individual, therefore, it involves social and industrial considerations.

The eradication of malaria is based upon three lines of procedure: community, family, and individual. The community methods include engineering, sanitary and agricultural processes—drainage, use of larvacides and intensive cultivation of the soil. The family methods include structural features of the home—screening of rooms or whole houses; use of mosquito nets. The individual procedure consists in prophylactic and curative systematic administration of quinine. Aside from the above, era-

dicative measures such as sanitation of houses, yards and surroundings, the use of mosquito-eating fishes, preferably the *Gambusia affinis*, and the establishment of residential districts on high ground free from decaying vegetation or mosquito-harboring trees and shrubs should constitute an important part of anti-malarial campaigns. Such is the magnitude of the problem, however, so large are the expenses involved in effecting necessary engineering work and so deficient is the health education obtaining among all classes, that for years to come the malarial evil must remain unremedied.

SANITATION OF THE CITY OF MANILA.

A high grade of efficiency standard has been maintained throughout the year. The prompt control of outbreaks of dangerous communicable disease within the city limits and its immediate environs would serve as sufficient evidence that the Service has done effective work in our insular metropolis. The incidence of cholera has been brought to the lowest possible figures, and smallpox practically barred out, even in the face of constant reinfections from the provinces. The work in connection with public health nursing, child welfare and medical supervision of schools has been given greater impetus than in former years. All in all, the work of sanitation and hygiene in the capital city has been highly satisfactory—the death-rate reduced from 47.47 in 1918 to 27.36; the birth-rate increased from 32.26 to 36.11; and infant mortality brought down from 397.56 to 224.95. Considering, however, that the best resources of the Service—money and personnel—are at all times at the disposal of the City, such a record would only emphasize the need of providing a health organization with ample ways and means, if efficient health administration and effective sanitary work are to be assured.

SANITATION IN THE PROVINCES.

Six additional provinces were organized into sanitary divisions during the year covered by this report. The number pertaining to the Division of Sanitation in the provinces number thirty-six in all, five of which are classified as special provinces on account of certain peculiar conditions obtaining therein—sparseness of population, relative backwardness of the peoples inhabiting same, and paucity of revenues and resources. Thirty-one are regularly organized provinces, and of these the Province of Romblon alone remained, at the close of the year, without a standard health organization. Out of a total of 830 municipalities, 740 are now organized, upon the basis provided by the existing laws, as municipal sanitary divisions.

The year proved to be as disastrous as 1918 for the provinces comprised within the division. The outbreaks of cholera, smallpox and bacillary dysentery, which were brought over as legacies of the previous year, showed no signs of abating right from the very beginning, and by the middle of the year, had assumed epidemic proportions in various localities. Smallpox took a toll of 43,294 lives; dysentery, 18,191; cholera, 17,261. These three diseases, therefore, took a total almost as large as that of the influenza epidemic of 1918. The greater portion of the time of the provincial health personnel had to be assigned perforce to the eradication of the three epidemics, and in consequence thereof, very few permanent sanitary improvements were effected during the year.

The prevalence of the above-named diseases was instrumental in maintaining a high death-rate—36.55 per 1,000, a considerably higher mortality as compared with the rates registered in Manila and Mindanao. On the other hand, the birth-rate registered a decrease greater than that registered after the influenza epidemic of 1918, resulting in a surplus of 17,815 deaths over the number of births reported.

SANITATION IN MINDANAO AND SULU.

The work effected in the division has been satisfactory during the year. Outbreaks of cholera and small-sized epidemics of smallpox occurred, but with the drastic measures instituted in all instances, each and every one was speedily brought under control. The end of the year saw the department totally clear of cholera and with only sporadic cases of smallpox in a few municipalities of Misamis and Surigao. The relative isolation of Mindanao and Sulu from the rest of the Archipelago made it possible for the Service to enforce ship inspection and carrier detection against inter-island vessels as measures against cholera with successful results as evidenced in lessened number of re-infections from outside and in the absence of serious outbreaks and wide-spread epidemics.

Preferential attention has been given to the disposal of human wastes, resulting in 13,063 new toilets patterned after the Antipolo type being installed during the year.

Fifteen new dispensaries were established during the year, making a total of 103 in actual operation at the end of same.

The service record of the hospitals, which have been in operation since 1917, has been kept up at top-notch, and served, through the institution and application of relief work, to maintain constituted authority and government among the pagan and Mahommedan peoples inhabiting the department. The hos-

pital as a public service, has indeed played an important rôle—as means of attraction—in the final pacification of Mindanao and Sulu, and in the establishment thereat of civil government.

MEDICAL RELIEF WORK.

The Service did considerable relief work, through the hospitals and dispensaries operated under its direct control. Incalculable benefits have been derived from these institutions, not alone in relieving human ills, but also in serving as centers of health education, and in popularizing public health work. As stated before, they also served as means of attraction in the institution of a stable government in the Department of Mindanao and Sulu. The table below will give an idea of the actual amount of work done during the year.

Divisional jurisdiction. ¹	Hospitals.		Dispensaries.	
	Number in operation.	Total admissions.	Number in operation.	Total admissions.
Manila ²	1	2,769		
Provinces	7	3,704	675	254,093
Mindanao and Sulu	8	4,475	103	69,492
Total	16	10,948	778	323,585

¹ Relief work done in Culion Leper Colony and in prisons is given under separate heads.

² San Lazaro contagious diseases hospital.

CULION LEPER COLONY.

The population of the Colony was 4,706 at the close of the year. Five hundred eighty-three deaths from various diseases occurred during the period covered by this report, with a mortality rate of 90.7 per thousand, which is not high considering that the majority of the patients arriving at Culion are already in a weakened condition and in advanced stages of leprosy, and in many instances complicated with other diseases.

Construction work was foremost among the activities in the Colony. Among the structures completed during the year were: the school-house with accommodations for 400 pupils, a tenement house, a strong concrete gate separating Balala, the non-leper section, from the Colony proper, and quarters for the resident physician. A new lighter consisting of a V-shaped hull 36 feet long was also built and put into commission during the year. Considerable building maintenance and repair work was also done, and many new constructions started.

The chaulmoogra clinic was in operation throughout the year with an average weekly attendance of 700 lepers.

Elections for representatives to the Colony Advisory Board for the biennial term of 1920–21 were held on December 1, 1919.

A total of 1,771 electors voted, this number including men and women between the ages of 18 and 60. No disturbance occurred during the elections.

It is encouraging to note that the lepers at Culion are not lacking in interest in life as evidenced by such activities as ordinary business pursuits, theatrical performances, club activities, cultivation of the soil, even politics of necessarily local character. It has always been the policy of the Service to create among the lepers a feeling of contentment for their lot, and no efforts have been spared to encourage them in their endeavors to find ways and means that would bring surcease to their physical pains, outlets for the activities of those still physically able to perform work and comfort to the feeling of loneliness that at some time or another must grip at the heartstrings of these unfortunate people. To their credit it must be stated that such efforts have met with ready response from the lepers, resulting in the promotion of relative contentment amongst them and in a decrease of escapes during the last few years.

SANITATION OF PRISONS.

The sanitation of prisons—Insular, provincial and municipal, is committed to the Service by the existing laws. Commissioned officers are assigned to duty at Bilibid Prison and in the penal colonies of Iwahig and San Ramon. Provincial and municipal jails are under the direct supervision of the local health officers.

Considerable medical relief and health work was done in these institutions during the year. In Bilibid Prison alone, with a daily average number of 2,650 prison population, and a total admission of 7,387 during the year, the service record has been large, as may be gleaned from the summary given below:

Total admissions in hospital.....	5,123
Total admissions in quarantine ward.....	4,319
Total examinations, Bureau of Science.....	91,815
Total examinations, Bilibid Laboratory.....	28,577
Total autopsies.....	63
Total prescriptions filled.....	10,568
Total operations, major.....	64
Total treatments, dressing room.....	4,370
Total vaccinations.....	7,528

The work done in the other penal institutions has likewise been large and in proportion to the prison population of each.

WORK OF THE ADMINISTRATIVE OFFICES.

Normal working conditions obtained in all the administrative offices of the Service, officers and employees alike manifesting, almost without exception, the same spirit of coöperation, in-

terest and enthusiasm in the work shown in former years. It is to be deplored, however, that with the excessive high cost of living and the allurements and better prospects held out by private concerns, the Service had to lose the services of trusted and experienced employees. Indeed, an undercurrent of dissatisfaction has been noted amongst those left on account of the prevailing low salaries. The loyalty and patriotism of these men alone have prevented a general stampede.

RECOMMENDATIONS.

1. WITH REFERENCE TO ORGANIZATION.

(a) Consolidation of all health and charity agencies in the Philippine Islands under a separate executive department, and creation of the Department of Health and Charities through amendments of the Jones Law.

(b) 2. Reorganization of the Philippine Health Service. Existing divisions and offices to be readjusted, and the following administrative divisions to be created: general administration; sanitation and epidemiology, to include the existing divisions of sanitation for the city of Manila, provinces, Mindanao and Sulu; medical relief and hospitals; child hygiene and health education; laboratories and scientific research; statistics and sanitary engineering. The present number of inspection districts to be augmented, the city of Manila and Mindanao-Sulu to be organized as inspection districts under the jurisdiction of the division of sanitation and epidemiology. The existing provincial and municipal health organizations to be included in the general scheme under the supervision of the same division.

(c) Creation of a "Training School of Sanitation" for commissioned and non-commissioned officers of the Service.

(d) The presidents of sanitary divisions to be classified as commissioned officers in the Philippine Health Service.

(e) All officers in the Service to be employed on full-time basis.

(f) The schedule of salaries to be as follows:

President of sanitary division.....	₱2,400
Surgeon	3,000
Senior Surgeon.....	3,600
Medical Inspector.....	4,200
Senior Medical Inspector.....	5,000
Senior Medical Inspector and District Inspector.....	5,800
Senior Medical Inspector and Chief of Division, one of whom should act as Assistant Director of Health.....	7,200
Director of Health.....	10,000

The salaries of non-commissioned officers graduated from the "Training School of Sanitation" should be as follows:

Assistant Sanitary Inspector, third class.....	₱600
Assistant Sanitary Inspector, second class.....	720
Assistant Sanitary Inspector, first class.....	900
Senior Assistant Sanitary Inspector.....	1,000
Sanitary Inspector, third class.....	1,200
Sanitary Inspector, second class.....	1,500
Sanitary Inspector, first class.....	1,800
Senior Sanitary Inspector.....	2,400

(g) The Service to furnish uniforms to non-commissioned officers free of charge.

2. WITH REFERENCE TO WATER SUPPLIES.

(a) Introduction and extension of methods of water purification.

(b) Stimulation and provision of facilities to communities and municipal governments for the drilling of artesian wells and the installation of gravity, hydrant or other safe systems of water supply.

3. WITH REFERENCE TO EXCRETA AND REFUSE DISPOSAL.

(a) Promulgation of a law empowering the Philippine Health Service to regulate the following: compulsory establishment of sanitary disposal of excreta and refuse in buildings and streets; elimination of cesspools and privies from municipal urban limits and provision of sanitary facilities to all buildings and structures.

4. WITH REFERENCE TO COMMUNICABLE DISEASES.

(a) Promulgation by the Service of a minimum standard for the control of nuisances.

(b) Declaration by the Service of the conditions which shall be considered as nuisances.

(c) Promulgation by the Service of standard requirements in industrial hygiene and sanitation of places of employment.

(d) Promulgation of a standard for the dwelling houses of laborers.

(e) Promulgation of standard methods for recording the sanitary conditions of communities.

5. MISCELLANEOUS RECOMMENDATIONS.

(a) The municipal council to be authorized to donate properties or money to societies undertaking the work of protection of infants, amending Section 2248 of the Administrative Code.

(b) Fixing the obligatory age for children in smallpox vaccination to seven days instead of "after three months" as provided at present in Section 1056 of the Administrative Code.

(c) The promulgation of a law to regulate vaccinations against cholera and typhoid fever.

V. JESUS,
Acting Director of Health.

The Honorable,
The SECRETARY OF PUBLIC INSTRUCTION,
Manila.

REPORT OF THE DIVISION OF GENERAL INSPECTION AND HOSPITALS

(Assistant Director of Health VICENTE DE JESUS, *in charge.*)

DIVISION OF GENERAL INSPECTION.

COUNCIL OF HYGIENE.

The Council of Hygiene held 15 sessions during the year, five of which were ordinary and 10 extraordinary sessions. The following subjects were considered and acted upon:

ORDINARY SESSIONS.

A proposed ordinance regulating the various *tiendas* in Manila was considered but rejected, the regulations in force being considered sufficient if they were enforced. It was also recommended to the Director of Health that the councils of the various municipalities of the Archipelago be urged, through the district health officers, to adopt and enforce so much of articles 971, 891, 616, etc., of the Revised Ordinances of the city of Manila as may be applicable to their respective municipalities. The question of regulation or complete suppression of prostitution was discussed but no definite solution arrived at. Examination questions were prepared and approved for the examination for promotion of Senior Medical Inspectors in the Philippine Health Service. Discussion and approval of the amendment of the proposed regulations governing the conduct of officers and employees of the Philippine Health Service. The proposed law making it obligatory to report all cases of venereal diseases to the Director of Health, recording of the cases and isolation of same, was considered and its authors informed that the Director of Health was empowered under the provisions of sections 938, 941, 950, and 2697 of the Administrative Code to handle such cases as he deemed best. In answer to a query from the Director of Health as to the application of anticholera vaccination, the Council informed him that it approved the measure as at present practiced, but reserved its opinion until the report of the Committee on Anticholera Vaccination is received. The proposed law to establish a "School for Graduates in Sanitation" was considered, but no action taken, the matter being held in abeyance pending further study and consideration of the Council. The dangers which threatened the public health of Manila, due to lack of water to properly sprinkle the streets and plazas of the city, were discussed, and it was agreed that the President of the Council interview the Mayor of the City and the City Engineer with a view to having this menace remedied.

EXTRAORDINARY SESSIONS.

Examination questions for the examination for Surgeons and Senior Surgeons in the Philippine Health Service were prepared and approved. Amendments to the law governing the practice of optometry in the Philippines were approved and forwarded to the Secretary of Public Instruction.

Expressions of the sincere regret of the Council of Hygiene for the premature death of the illustrious companion who in life was called Manuel S. Guerrero, were read. Dr. Gervasio de Ocampo, the new member, attended the meetings of the Council on March 7 for the first time.

The following courses of study for the pensionados from the Philippine Health Service to be sent to the United States were recommended:

Group 1.—Vital statistics, demography and epidemiology and practical knowledge supplementary to these subjects. The complete course of this study should not be less than one year.

Group 2.—Laboratories, manufacture of serums and vaccines, and serology. Time to complete this course two years.

Group 3.—Sanitary engineering, one year.

Group 4.—Public health work in general, two years.

The difficulties and inadequate means for conducting the small-pox campaign in the provinces were given much consideration with a view to making recommendations to the Legislature for improving them. The water crisis problem was taken up with the Mayor of the city of Manila and the engineer in charge of the Metropolitan Water Works District and a resolution adopted, embracing all the points in question, and recommending the adoption of an ordinance by the Municipal Council of Manila, appropriating sufficient funds to enable the City to acquire all the necessary apparatus and accessories for an adequate water service and street sprinkling system. The council of Hygiene, accompanied by the Director of Health, visited the Montalban water reservoir on May 16 and that of San Juan del Monte on May 23. On June 12 the Council visited the Cholera Ward of San Lazaro Hospital. A memorandum, submitted by Dr. Ampil, Chief of San Lazaro Hospital, suggesting improvements in the institution under his control, was accepted, and a resolution to this effect adopted, including an increase in the number of nurses, and the segregation of pay patients on one floor of the cholera ward and the free patients on another. The progress of the cholera epidemic, its virulence and mortality caused by it, and its technical phase in relation to the actual epidemic, were considered, both in the provinces and in the city of Manila, and

in particular, the inadequate and inefficient personnel of the Service. The reorganization of the Division of Sanitation in the provinces, for the purpose of increasing its efficiency, and an increase in the appropriation for 1920 for this division of ₱1,900,040 over that of 1919, in order to effect the reorganization, were approved.

The Council of Hygiene rendered inestimable counsel and assistance to the Health Service during the year 1920 in solving the numerous health problems that arose from time to time and in drafting and recommending legislation and regulations to be incorporated into the organization of the Health Service.

FOOD INSPECTION.

The Board of Food Inspection held semi-monthly meetings to pass upon questions arising in connection with the enforcement of the Food and Drugs Act and to receive protests against any action taken in its administration.

Of importations of foods of which samples were submitted to the Bureau of Science, 166 were admitted without change of label; 35 were admitted on amendment of label, one of these being a coal tar color not permitted in food products, which was admitted upon being labeled "This color should not be used for food purposes," and 2 found to be decomposed and one containing salicylic acid were rejected.

In addition, a large number of samples were collected by the food inspector and analyzed by the Bureau of Science.

The following table shows the work done by the food inspection department during the year.

Foods examined, condemned and rejected.

Kinds of food.	Number of samples examined.	Number of units condemned.	Number of units of imported foods rejected.
Asparagus.....	2	0	
Beans.....	19	0	
Bacalao.....	2	0	
Bagong.....	2	0	
Bamboo sprouts.....	7	0	
Beer.....	12	0	
Burdock.....	2	0	
Butter.....	7	0	
Beef.....	21	0	
Cabbage.....	4	0	
Coffee.....	5	0	
Cheese.....	18	7,062 tins and 24 cheeses.	
Candy.....	45	0	
Chocolate.....	80	0	
Celery.....	2	0	
Catsup.....	6	0	
Cakes.....	17	0	
Carrots.....	1	0	
Dulce de linga.....	3	0	
Dulce de mani.....	2	0	
Dulce de coco.....	2	0	
Doughnuts.....	12	0	
Egg-plant.....	3	0	

Foods examined, condemned and rejected—Continued.

Kinds of food.	Number of samples examined.	Number of units condemned.	Number of units of imported foods rejected.
Eggs	22	0	
Food colors	6	0	
Fish	5	0	
Grapes	2	40	
Ginebra	31	0	
Guava jelly	6	0	
Ham	10	0	
Hogloin	1	0	
Jopia	16	0	
Lard	2	0	
Lemon extract	1	0	
Lemon sauce	18	0	
Liver sauce	2	0	
Meats	18	0	
Milk	31	819 tins.	1,000 cases.
Melon	1	0	
Mushroom	1	0	
Misua	1	0	
Miqui	1	0	
Oysters	5	0	
Oats	1	0	
Onions	1	0	
Oranges	6	0	
Patis	55	0	
Pechay	2	0	
Peas	2	0	
Pie	9	0	
Pickles	7	0	
Pineapples	3	0	
Pepper	5	0	
Peaches	2	0	
Rice	3	0	
Sausage	11	0	
Sardines	63	4,923 tins	
Salmon	69	10,311 tins	3,000 cases.
Sliced ham	1	0	
Sorbetes	66	0	
Sulpao	3	0	
Toyo	53	0	
Tomatoes	5	0	
Tokua	4	0	
Taju	2	0	
Tajure	2	0	
Tira-tira	16	0	
Tomato sauce		0	12 bottles.
Vinegar	46	0	
Vanilla	2	0	
Wines	57	0	
Water, aerated	389	0	
Water, drinking	308	0	
Whisky	28	0	
Total	1,675	23,179	4,012

Estimated value of food destroyed, ₱6,015.99.

Estimated value of imported foods rejected, ₱77,012.

Also numerous samples from the provinces were submitted by the district health officers.

The following administrative decisions under the Food and Drugs Act were issued:

No. 177-a.—Defining and fixing standard for toyo sauce.

No. 177-b.—Defining and fixing standard for milk sherbet.

No. 178.—Defining and fixing standard for milk and cream.

No. 179.—Amending paragraph (j) of Regulation 28 of the rules and regulations for the enforcement of the Food and Drugs Act.

No. 180.—Amending administrative decision No. 175.

Fines were imposed by the court for violations of the Food and Drugs Act as follows:

Milk, adulterated.....	₱20.00
Cream soda, adulterated.....	7.00
Chocolate, adulterated and misbranded.....	20.00
Do	10.00
Do	10.00
Do	10.00
Do	10.00
Do	10.00
Do	10.00
Do	20.00
Do	20.00
Do	20.00
Do	20.00
Do	20.00
Total	207.00

In many cases analyses of candies, cakes and soft drinks showed that nonpermitted coal tar colors were being used in their manufacture. Investigation of the cases usually showed that the colors used were purchased from local importers under labels indicating that they were vegetable or permitted food colors. To correct this evil manufacturers were warned that persons apprehended using prohibited food colors would be prosecuted, and informed that the Bureau of Science would analyze colors for use in foods for a nominal sum, and that persons using coloring material which has not been analyzed do so at their own risk.

A complete survey was made of chocolate and chocolate mixtures, vinegar of domestic manufacture, condiments of domestic manufacture, vinegar and liquors, and steps taken to secure correct labeling of these products and to prevent the watering of vinegar and the sale as vinegar of dilute acetic acid.

A large number of samples of milk sherbet, which were being sold under the name of ice cream, collected from the various ice-cream parlors in Manila were analyzed and nearly all found to be short of milk-fat. Some of these ice-cream parlors were not conducted in the most sanitary manner, but frequent inspections and warnings that penalties would be imposed resulted in bringing their products up to standard and in making the required sanitary improvements.

Also new regulations for the operation of aerated water factories and the manufacture of aerated water and soft drinks were issued and enforced. Many of the aerated waters were found to contain impurities and two factories in Manila and several in the provinces were closed up and not permitted to re-open until the waters were shown to be free from impurities and the required improvements in the factories had been made. The

results have been very satisfactory, the waters having been found entirely free from impurities and the factories clean and sanitary with many modern improvements installed.

The sale of watered milk, both in Manila and in the provinces, and greater precautions as to cleanliness, particularly on the part of the local milk venders, both in Manila and in the provinces, were given special attention. All dairies in Manila and vicinity are prohibited from selling other than pasteurized milk.

The enforcement of the requirement that all food packages shall bear a statement of the quantity of their contents still requires considerable attention.

PROVINCIAL CEMETERIES.

The activities in this branch of the Service compare favorably with those of the preceding year. Seventy-three new cemeteries were approved as compared with 80 in the preceding year; 7 old cemeteries approved as compared with 13 in the preceding year, 52 old cemeteries reopened as compared with 25 in the preceding year, and only 23 reported as insanitary as compared with 31 in the preceding year, which were all repaired and improved to comply with the requirements of the cemetery rules and regulations before the end of the year.

The following table shows the various activities during the year as compared with the previous year:

	1918	1919
New cemeteries approved.....	80	73
Old cemeteries approved.....	13	7
Old cemeteries reopen.....	25	52
Total.....	118	132
Old cemeteries closed.....	45	45
Extensions of time granted.....	37	27
Enlargements approved.....	6	16
Proposed new cemeteries disapproved.....	1	5
Cemeteries reported as insanitary.....	31	23

DIVISION OF HOSPITALS.

This division includes the following hospitals:

INSULAR.

San Lazaro Hospital, Manila.
 Bilibid Hospital, Manila.
 Baguio Hospital, Mountain Province.
 Bontoc Hospital, Mountain Province.
 Kiangnan Hospital, Mountain Province.
 Cuyo Hospital, Palawan.
 Iwahig Penal Colony Hospital, Palawan.
 Bayombong Hospital, Nueva Vizcaya.

MINDANAO AND SULU.

Butuan Hospital.
 Cotabato Public Hospital.
 Davao Public Hospital.
 Lanao Public Hospital.
 Misamis Provincial Hospital.
 Rizal Memorial Hospital.
 Sulu Public Hospital.
 Zamboanga Public Hospital.

PROVINCIAL.

Albay, Albay.
 Naga, Ambos Camarines.
 Tacloban, Leyte.

SAN LAZARO HOSPITAL.

The desire to put into practice the provisions of the Jones Act which grants the Filipinos the greatest participation in the conduct of their own affairs and which prepares them to assume the responsibilities of a free and independent Government of their own, has made it possible to place into the hands of Filipino physicians the management and administration of the San Lazaro Hospital. Conformably with the above policy, we have been entrusted with the management of this hospital since January 1, 1919, and as such, became responsible to the Director of Health for its success.

The first step undertaken by the management was a complete reorganization of the work in the institution, dividing it into separate departments and placing at the head of each an officer of responsibility and creating in each and everyone of their personnel, the idea that only by disinterested work, utmost coöperation and good will, can there be attained complete success in the management of the hospital, which also depends to a large extent on mutual understanding, appreciation, and companionship.

From the point of its operation, the hospital has been divided into departments, as follows:

1. Contagious Disease Department.
2. Insane Department.
3. Leper, Tuberculosis and Old Peoples' Department.
4. Administrative Department.
5. Executive Office.

For the purpose of administration, the hospital has been organized as follows:

I.

CHIEF, SAN LAZARO HOSPITAL.

1. Physician, Venereal Clinic (male).
 (a) Intern, Venereal Clinic (female).
2. Physician, Contagious Disease Department.

3. Physician, Insane Department (male and female).
4. Physician, Leper, Tuberculosis and Old People's Department.
5. Physician, Clinical Laboratory.
6. Pharmacist.
7. Chief Nurse.
 - (a) Assistant Chief Nurse.
 - (b) Nurses, male and female.
8. Hospital Attendants, Male Insane Department.
9. Matron Guard, Female Insane Department.
 - (a) Seamstress and helpers.
10. Chief Guard, civilian.
 - (a) Guards, civilian.
11. Chief Guard, Leper Department.
 - (a) Capataces and leper guards.
12. Matron Guard, Leper Department.
 - (a) Helpers, female.

II.

SUPERINTENDENT, SAN LAZARO HOSPITAL.

1. Cashier and Property Clerk.
2. Administrative Division (clerks and messengers).
3. Adviser to Dietitian.
 - (a) Dietitian.
 - (b) Assistant Dietitians (1st and 2nd) cooks and helpers.
4. Transportation and Sanitation Division.
 - (a) Laborers.
5. Carpenters.
6. Plumbers.
7. Mason.
8. Blacksmith.
9. Morgue Foreman.
 - (a) Litter bearers.
10. Foreman, General Service Section.
11. Foreman, Laundry.
12. Gardener.
13. Painter.
14. Foreman, Street and Drainage System Section.

EPIDEMIC DISEASES.

Among the contagious diseases which appeared during the year in the form of epidemics may be mentioned cholera.

Cholera cases were present during the year, and the monthly average was 21 cases during the first and second quarters of the year, and during the third quarter the cases increased to 431 in July; 495 in August, and decreased to 230 in September, giving an average of 385.3 cases monthly. During the last quarter, 176 cases were registered in October; 49 in November and 14 in December, an average of 79.6 cases per month.

The total number of cases admitted during the year, including the six cases brought forward from 1918, was 1,527, with 280 deaths. They were received from the following places:

Number of cases brought forward from 1918..... 6

City of Manila:

Health Station No. 1 (Intramuros).....	218
Health Station No. 2 (Meisic).....	208
Health Station No. 4 (Sampaloc).....	187
Health Station No. 5 (Tondo).....	389
Health Station No. 6 (Paco).....	145
	<hr/>
	1,147

1,153

PROVINCES.

Rizal:

Parañaque	154
Pasay	89
Fort Wm. McKinley.....	27
Las Piñas	17
San Pedro Makati.....	15
Caloocan	10
San Juan del Monte.....	9
San Felipe Neri.....	9
Mandalayon	6
Navotas	5
Blumentritt	5
Pasig	3
Taguig	2
Malabon	1
Taytay	1
Montin Lupa.....	1
Kisaw	1
	<hr/>
	355

Bulacan:

Paombong	3
Guiguinto.....	2
Malolos	1
San Miguel	1
	<hr/>
	7

Cavite:

Cavite	1
Bacoar	1
	<hr/>
	2

Batangas:

Batangas	2
	<hr/>
	2

Provinces—Continued.

Laguna:

Calamba	2	2
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Bataan:

Orani.....	1	1
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Tarlac:

Tarlac	1	1
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Pangasinan:

Pozorrubio	1	1
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Zamboanga (Reported by Quarantine Service).....	3	3
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Total.....	1,527
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CLINICAL RESULTS OBTAINED IN THE CONTAGIOUS DEPARTMENT.

The brilliant results obtained from the clinical work during the year manifested itself in the reduction of the number of deaths and the rapid cure of cases treated.

The following table shows the number of cases, deaths, average death rate and kind of disease, as compared with the results obtained during the year 1918:

Disease.	1919			1918		
	Cases.	Deaths.	Rate per cent.	Cases.	Deaths.	Rate per cent.
Cholera.....	1,527	280	18.33	403	107	26.55
Measles.....	360	1	.27	464	6	1.30
Varicella.....	199	0	.00	20	0	.00
Diphtheria.....	180	21	11.66	75	15	20.00
Dysentery.....	105	10	9.52	170	40	23.52
Gonorrhoea.....	89	1	1.17	49	1	2.04
Smallpox.....	80	37	46.25	1,097	528	48.93
Typhoid, paratyphoid.....	54	6	11.11	48	9	25.00
Tetanus.....	48	25	52.08	53	31	58.49
Mumps.....	39	1	2.56	167	2	1.19
Varioloid.....	29	0	.00	860	11	1.27
Syphilis.....	15	0	.00	0	0	.00
Broncho-pneumonia.....	9	0	.00	0	0	.00
Scabies.....	9	0	.00	0	0	.00
Erysipelas.....	4	1	25.00	0	0	.00
Cerebro-spinal meningitis.....	5	2	40.00	0	0	.00
Grippe.....	4	0	.00	9	0	.00
Yaws.....	3	0	.00	0	0	.00
Pneumonia.....	2	0	.00	0	0	.00
Boils.....	2	1	50.00	0	0	.00
Gastro-enteritis.....	2	0	.00	0	0	.00
Hydrophobia.....	1	1	100.00	0	0	.00
Bronchitis.....	1	0	.00	0	0	.00
Dyspepsia.....	1	0	.00	0	0	.00
Herpes.....	1	0	.00	0	0	.00

ACCOMMODATION OF PATIENTS AND DISTRIBUTION OF PERSONNEL
DURING THE EPIDEMIC.

The number of beds available in this hospital for patients is too small in proportion to the population of the city. The San Lazaro Hospital is a hospital for contagious communicable diseases and its use during those times when any of the above diseases assume the proportions of an epidemic becomes urgently necessary, not only for the accommodation and isolation of patients within the city of Manila, but also, as was observed in the last cholera epidemic, of patients coming from the near-by municipalities and neighboring provinces, such as, Rizal, Bulacan, Cavite, Batangas, Laguna, Bataan, Tarlac, Pangasinan, and Zamboanga (cases from the last province reported by the Quarantine Service).

During the first month of the year arrangements were made toward this end, so as to meet any emergency which might occur at any time; the wards were prepared, emergency beds provided, and hospital tents ordered, as well as other supplies, such as clothing and bedding, equipment, etc.

Although all these supplies were not on hand when the cholera cases were increasing in the middle of July, all the preparations made previously were taken advantage of and all demands fully met.

To meet the emergency, the number of personnel was increased in every section, other sections were created to meet new demands, and the work of certain sections was carried on day and night.

The medical staff was mobilized by detailing them provisionally to the contagious diseases department, and leaving only the necessary medical officers to attend the other departments. The same procedure was put into practice in regard to the division of nurses.

Though the medical staff of the hospital is sufficient to take charge of the new activities, the Reverend Rector of the Santo Tomas University offered to the Director of Health the services of 15 students of the last year's class, five for each eight hour shift, who were detailed in this hospital. A similar offer of 12 students was made by the Dean, College of Medicine and Surgery of the University of the Philippines, thus making the personnel of the contagious diseases department during the period of the epidemic as follows:

- 4 physicians of the hospital staff.
- 15 medical students, Santo Tomas University.
- 12 medical students, University of the Philippines.
- 28 nurses.
- 24 helpers.

COMPLAINTS AGAINST THE SERVICES OF THE SAN LAZARO HOSPITAL.

Complaints against services rendered by any hospital are numerous and frequent. In an institution where about 250 employees take part in the work the matter of complaints, is, in most of the cases, unavoidable, even though the chief of the institution is actuated by good faith and makes every effort to give the best service for the benefit of the interests of the community in general.

In order to know the nature of the complaints and to determine the weak point in the present administrative organization of the hospital, such as the conduct and the kind of services rendered by each and everyone of the employees, this office established during the year a *Book of Complaints* in all departments, where the admitted patients or their relatives may write their complaints against the services rendered in the hospital.

The records of the hospital in regard to this matter show the following:

Number of persons registered in the books.....	1,045
Number of persons satisfied with the service.....	1,044
Number of persons complaining of the service.....	1

Nature of the complaint, as he remarked:

Deficient service in Ward "V," in food and treatment of patients by nurses.

THE PRESS AND SAN LAZARO HOSPITAL.

There were written and published in the newspapers of the locality several interesting comments concerning the hospital. The institution was frequently visited by the newspapers' representatives, before the cholera epidemic, during and after it, and they have written comments of the results of their impressions. The public, through these means, came to understand the real value and importance of the San Lazaro Hospital to the community as one of the potent factors for the welfare of its health and as a lifesaver to its sick members. For this reason, the chief of this hospital, in his name and in that of his companions expresses his gratitude to all the representatives of the press, more especially to those of *La Vanguardia*, *Manila Times*, and *El Ideal*, for their kind coöperation in giving true and accurate information, which act inspires each and every-

one of the hospital's personnel to take more interest and enthusiasm to continue working for the health of the community and the welfare of its inhabitants.

PEACE AND ORDER IN THE INSTITUTION.

It is most gratifying that the year 1919 has been for all the hospital personnel a year of harmony, peace and order. Individually, each and everyone of the employees, have complied faithfully with all the duties assigned to them, have worked as much as could properly and reasonably be expected of them and have done and given on their part all the means within their reach for the prestige and honor of the institution. With the conduct observed by the employees, many disagreeable things were avoided, among which were ill-feeling, friction, and misunderstanding, and as a result, peace and harmony reigned.

CONTAGIOUS DISEASES DEPARTMENT.

{ Dr. CATALINO GAVINO, *Resident Physician in Charge.*
 { Dr. MARCELO AGANA, *Assistant Resident Physician.*
 { Dr. JOSÉ DE LEON, *Assistant to Physician in Charge.*

The San Lazaro Hospital is the only one of its kind in the city of Manila. It is a hospital for patients suffering from contagious communicable diseases, and consequently this department is the most important one because of the nature of its work which keeps it constantly in touch with the public in general.

This department is divided into separate wards as follows:

The wards are numbered "0," "1," "2," "3," "4," and Pay Patient Ward.

In ward "0" are located the office of the physician in charge, office of the chief nurse, and the clinical laboratory of the hospital.

In normal times this ward can accommodate 32 patients, which number can be increased to 57 during abnormal times.

In ward "1," 24 patients can be accommodated in normal times and 46 in abnormal times.

In ward "2," 36 patients can be accommodated in normal times and 56 in abnormal times.

In ward "3," 36 patients can be accommodated in normal times and 56 in abnormal times.

In ward "4," 50 patients can be accommodated in normal times and 87 in abnormal times.

The wards are located in separate buildings and divided into rooms by partitions so that patients suffering from certain diseases are isolated from each other.

There is constant service in this department, of physicians and nurses. On the first day of each month, the chief of the hospital issues a schedule of the duties of the physicians of the

department, and the chief nurse, with the approval of the chief, issues a schedule of the duties of the nurses who coöperate with the physicians. The superintendent details the necessary helpers for the work of the department, and they receive orders from the chief nurse, who details them in the wards.

All patients suffering from dangerous communicable diseases, as classified by the Director of Health, are admitted to the department. During the year there were 2,632 cases admitted, distributed as follows:

Cerebro-spinal meningitis.....	5
Cholera	1,521
Diphtheria	180
Dysentery	104
Hydrophobia	1
Measles	296
Mumps	18
Smallpox	76
Tetanus	48
Typhoid fever.....	54
Varicella	199
Venereal diseases:	
Gonorrhoea	88
Syphilis	15
Total	2,605

and occasional admissions of miscellaneous cases of the following diseases:

Boils	2
Bronchitis	1
Broncho-pneumonia	9
Dyspepsia	1
Erysipelas	4
Gastro-enteritis, acute.....	1
Grippe	3
Herpes	1
Pneumonia	1
Pneumonia, grippal.....	1
Scabies	9
Yaws	3
Total	36

ADMISSION, TREATMENT AND DISPOSITION OF PATIENTS.

Admission.—Patients suffering from contagious diseases may be sent to the hospital by the health stations of the city, by the health authorities in the provinces, or the patients may report directly to the hospital for treatment.

All patients sent by the health stations are accompanied by proper transfer slips, and are immediately examined upon arrival by the physician in charge to confirm the diagnosis.

Patients sent from the provinces and those who present themselves directly are likewise received, but in case they are not accompanied by transfer slips, the chief nurse fills them out and forwards them to the office of the superintendent who reports them immediately to Health Station No. 1, Intramuros, for record.

The chief nurse fills out the clinical records with the required data. Immediately after arrival the patient is vaccinated, if he does not show signs of a recent successful vaccination, and afterwards he is assigned to a ward by the physician in charge for treatment.

The physician of the department prescribes immediately the treatment for the patient, which is carried out by the nurses detailed in the ward. The clinical history of each case is immediately filled out by the attending physician.

After the patients have been assigned in the wards, the nurses immediately bathe them with a warm solution of 1 per cent lysol and soap and change their personal clothing with the hospital clothing prescribed by the regulations. The personal clothing of each patient admitted and other personal property, if any, except money and valuable effects, are recorded on a receipt, in triplicate, provided for the purpose, and forwarded to the foreman in charge of the laundry for disinfection, washing and care. The receipt, once signed by the laundry foreman, is returned to the nurse in charge of the ward, who attaches a copy to the clinical record of the patient and forwards one copy to the office of the superintendent, through the chief nurse, and the third copy is retained in the laundry for record.

Treatment—The treatment administered to cholera patients was as follows:

Every patient admitted in a weakened and collapsed condition was given at once on admission.

Strychnine sulphate 1/60 Gr.....	(hypo.)
Camphorated oil 3 c. c.....	(hypo.)
Salt solution with Sod. bicarbonate and Adrenaline.....	(proctoclysis, cont.)

There were, in all, 536 cases admitted in this weakened and collapsed condition. Intravenous infusions were also given either in direct or open method to these cases, or to any one who later became pulseless. The intra-peritoneal infusion referred to by Rogers, gave satisfactory results in ten children below four years in collapsed and weakened stages, not marked, while in the advanced cases where the circulation was weakened the absorption was quite hard and almost all deaths were due to marked oligemia.

The Rogers treatment was tried for a certain period on a considerable number of patients, but the results showed that his

hypertonic solution of intravenous infusion caused, in the majority of cases, diminution of the permeability of the kidneys, and its serious and almost fatal complication was uremia as verified by autopsy.

The standard treatment that is followed at present is as follows:

Cold solution of potassium permanganate (0.06 to 0.25) in 1000 c. c. of water, to drink freely, alternating with cracked ice for 24 or 48 hours, depending upon the severity of the infection. It was found better to use calcium permanganate, instead of the former as advised by Dr. Rogers, but it could not be obtained on the market.

Sodium bicarbonate from 0.30 to 0.40 grams administered every 3 or 4 hours, to modify the acetoneuria or acidosis of the organism.

Camphorated oil in large doses and strychnine sulphate by hypodermic injection are given as cardiotonic and stimulant.

Atropine sulphate was used in cases with marked and rapid dehydration and serious exfoliation due to cholera toxins, showing rapid tendency to fall into the stage of collapse even though sufficient quantity of salt solution had been administered by intravenous infusion. In the majority of cases where atropine sulphate was administered there was noted an extraordinary change in its course, and frequently the patients did not perspire freely, while the cyanosis disappeared gradually.

The following formula has been adopted for intravenous infusion:

Normal salt solution 0.9 per cent.....	1 liter.
Sodium bicarbonate	2.50 grams.

The addition of sodium bicarbonate is to modify and to neutralize the acidosis of the organism, as recommended by Wall, in 1891, Sellards, in 1910, and Negaw and Rogers later.

The intravenous infusion by direct method was much preferred to the open method, to avoid the frequent secondary infection of the wound through contamination with stools and urine, which not infrequently happens.

The table below shows the number of cholera patients, and number of intravenous injections given them:

204 cases had 2 or more injections.
550 cases had 1 injection only.

As a complementary treatment urotropine and salol were given internally as antiseptic for the intestines and gall-bladder where cholera vibrio are frequently found.

One of the serious and almost fatal complications of cholera infection was uremia due to toxic nephritis as evidenced by 40 per cent of fatal cases registered. Hot pack at 38° to 38.5° C., lasting from 15 to 20 minutes and followed by an enema of sodium bicarbonate solution, has been found successful, giving 20 per cent of recoveries.

Pregnancy and cholera.—There is no doubt that pregnancy is fatal to the foetus, as 50 per cent of the deaths occurred among mothers. During the year there were registered the following cases of pregnancy:

3 months' pregnancy.....	2
4 months' pregnancy.....	3
5 months' pregnancy.....	5
7 months' pregnancy.....	2
Total.....	12

Of these cases there were recovered and died:

Mothers:

Recovered	8
Died	4

Foetus:

Recovered	0
Died	12

Disposition of recoveries.—Cases recovered, both cholera and cholera carrier, are only discharged from the hospital after four successive negative results of four consecutive examinations of their stools have been obtained.

Smallpox.—Among the 76 cases admitted, 37 deaths were registered, 3 Americans, 32 Filipinos, and 2 others.

Varioloid.—Among the 29 cases admitted, 1 death occurred due to umbilical tetanus.

Varicella.—Among the 199 cases admitted, no death was registered.

Measles.—Among the 298 cases admitted, one death occurred due to broncho-pneumonia.

Diphtheria.—Of the 70 cases of diphtheria, 21 died, 18 Filipinos and 3 Chinese. This high percentage of mortality was due to the advanced stage of the disease upon the admission of its victims, so that the serum treatment was no longer efficacious in the majority of these cases. Laryngeal intubations were performed upon 7 cases, with three deaths. Of the above recovered cases, one showed typical diphtheria paralysis during convalescence, but it was only transitory.

Diphtheria carriers were compulsorily hospitalized, and in all there were 110 cases admitted, and discharged from the hospital only after two successive negative results of two consecutive examinations of swab specimens from nose and throat.

Dysentery.—Among the 104 cases admitted, there were found 40 cases positive for bacillary dysentery, 2 positive for amoebic dysentery and 2 positive for ascariasis. All cases found posi-

tive for dysentery were given anti-dysenteric serum while the negative cases were treated by the classical method.

Ten deaths were registered, all Filipinos, and five of these were autopsied with the anatomical diagnoses as follows:

Intestinal and pulmonary tuberculosis.....	1
Acute bacillary dysentery.....	1
Bacillary dysentery and cirrhosis of liver.....	1
Endocarditis, acute, vegetative; colitis, pseudomembranous, acute; pericarditis, pleuritis, sero-purulent.....	1
Acute ulcerative colitis (bacillary dysentery).....	1

Tetanus.—Among the 48 cases admitted, 25 deaths occurred. The serum treatment in the earliest stage of the disease has given very successful results in the majority of cases, especially when it is given intravenously in large doses. But neither Baccelli's treatment of phenol solution, even in large doses, nor the magnesium sulphate solution, by intraspinal or intravenous injection, has given successful results. They have, however, proved quite successful in a few cases, when they were administered in conjunction with the antitetanic serum treatment.

Typhoid and paratyphoid.—Among the 34 cases of typhoid fever and 2 cases of paratyphoid admitted, six deaths were registered. No treatment other than the ordinary precautions and classical method of treatment were instituted in these cases.

Cerebro-spinal meningitis.—During the year there were only 5 cases registered at the hospital and, 3 of them were admitted under observation and never confirmed by any further observations, and the 2 which were clinically and microscopically confirmed as cerebro-spinal meningitis, although they were given a sufficient quantity of antimeningitis serum, by intraspinal injection, succumbed later.

Final disposition of patients.—Patients may be discharged as cured under the following conditions:

1. When the disease has ceased to be dangerous and contagious.

2. For cholera cases, there are required four consecutive microscopical examinations, all the results of which must be negative. The same provision also applies to cholera carriers.

3. For smallpox, varioloid and varicella, there is required the complete descumation of all scabs of ulcers and pustules.

4. For diphtheria cases, there are required two consecutive microscopical examinations for diphtheria bacilli of the specimens taken from the throat, both of which must be negative. This also applies to diphtheria carriers.

5. For measles cases, it is required that the fever must have disappeared for at least 48 hours.

6. For bacillary dysentery, it is required that there be made two consecutive microscopical examinations for bacillus dysentery with negative results, together with two consecutive microscopical examinations for cholera vibrio of the specimens taken from stools, also with negative results.

7. For cerebro-spinal meningitis, it is required that there be made two consecutive microscopical examinations for meningococcus of specimens taken from the larynx and pharynx and of the cerebro-spinal fluid, both with negative results.

8. For gonorrheal cases, it is required that there be made four microscopical examinations for gonococcus at intervals of 48 hours with negative results, and for syphilitic cases, it is required that all lesions of the skin and of the mucous membrane are completely healed and a Wasserman reaction test with negative result.

For cases of cholera, diphtheria and cerebro-spinal meningitis, action depends upon the results obtained from the microscopical examinations made by the Bureau of Science, and for all other diseases upon the decision of a committee composed of the chief of the hospital and the physician in charge of the department.

Clinical work carried out during the year.—There were admitted and treated in this department the following cases.

Diseases.	Number of cases.	Number of deaths.
Cholera	1,527	280
Measles	360	1
Varicella	199	.....
Diphtheria	180	21
Dysentery	105	10
Gonorrhœa	89	1
Smallpox	80	37
Typhoid and paratyphoid fever.....	54	6
Tetanus	48	25
Mumps	39	1
Varioloid	29	.....
Syphilis	15	.....
Broncho-pneumonia	9	.....
Scabies	9	.....
Erysipelas	4	1
Cerebro-spinal meningitis.....	5	2
Grippe	4	.....
Yaws	3	.....
Pneumonia	2	.....
Boils	2	1
Gastro enteritis, acute.....	2	.....
Hydrophobia	1	1
Bronchitis	1	.....
Dyspepsia	1	.....
Herpes	1	.....

INSANE DEPARTMENT.

(Dr. ELIAS DOMINGO, *Physician in charge.*)

Important changes were made in this department by the re-organization of the work, not only in regard to the care of the patients, but also as to how they should be treated. Insanity is a disease; and the insane are, from a medical point of view, sick persons who should be treated humanely and scientifically.

This department is quartered in two independent buildings, the sexes being entirely separated from each other. A specialist in mental and nervous diseases is assigned to the department and under his responsibility rests the treatment of the patients. There is constant services of nurses in both the male and female departments.

There is assigned a hospital attendant to the male department who is responsible to the chief of the hospital for the care of the patients, discipline in the department and personal safety of all. For order and personal safety, civilian guards in permanent service, are detailed, who alternate on duty every eight hours, and while on duty they are under the supervision of the hospital attendant.

The patients in this department are classified as follows:

- (a) Improved patients.
- (b) Unimproved patients.
- (c) Violent patients.
- (d) Patients under physico-therapeutic treatment.
- (e) American and European patients.

The violent patients are confined in cells separated from the others and those under physico-therapeutic treatment are placed in the clinic of the department. While the patients are in the clinic they are placed in the care of the physician in charge, but as to their personal safety, the hospital attendant is responsible, and exercises supervision over them with the aid of the guards.

The female insane department is organized in the same way under the supervision of a matron who maintains order and the personal safety of the patients with the aid of female helpers.

ADMISSION AND TREATMENT OF INSANE PATIENTS.

Admission.—Insane persons are admitted to the hospital under the authority of the Director of Health.

Treatment.—On admission, the patients are thoroughly examined mentally and are placed in the infirmary for observation of the physician specialist. Laboratory examination is made of the blood, urine, and feces, and the patients placed under

medical treatment in case pathological findings show any ailments. If, upon observation the case proves hopeless or shows a marked deterioration, the patient is turned over to the attendants for proper care and occasional discipline as to his conduct. The incipient or curable cases are kept in the clinic under intensive psychotherapeutic, occupational, and hydrotherapeutic treatment, and after they have shown improvement, they are turned over to the attendants for further observation. Should they develop another attack, they are returned to the infirmary. This system was adapted from the psychopathic wards established in large cities in the United States. It is regretted that no separate building was set aside for these cases.

Occupational therapeutics.—In order to properly train their thoughts, the patients are placed in the industrial department as observers at first, to draw their interest to do some actual work, and by so doing, they are gradually taught to do some light work, such as slipper making, matting, and basketry. The scientific foundation of occupational therapeutics can not be underestimated in this class of patients and has proved to be a benefit to both the Institution and the patients.

Insane patients admitted to San Lazaro Hospital during the year.

	Male.	Female.
January	19	3
February	8	0
March	14	9
April	17	2
May	12	3
June	9	5
July	18	4
August	14	6
September	27	7
October	20	7
November	9	4
December	14	10
Total	181	65

Patients discharged as recovered, transferred, escaped, or died.

	Male.	Female.
Discharged as recovered	91	38
Transferred	37	9
Escaped	8	0
Died	33	3
Total	169	50

Classification of cases in the male insane department.

Diseases.	Number of cases.
Dementia praecox	92
Hebepherenic	3
Catatonic	3
Paranoid	12
Manic depression:	
Manic type	84
Depressed stage	16
Paranoid type	3
Mixed type	1
Paranoia	11
Psychopathic personality	7
Epileptic psychosis	12
Feeble-minded	6
Senile dementia	7
Unclassified	24
Alcoholism:	
Alcoholic hallucinosis	1
Alcoholic confusion	1
Alcoholic dementia	3
Alcoholism, chronic	3
Morphinism	1
Brain syphilis	1
Paresis	1
Total	289

Classification of cases in the female insane department.

Diseases.	No. of cases.
Manic depression	58
Dementia praecox	39
Dementia (undetermined nature)	7
Senile dementia	3
Epileptic psychosis	2
Paranoia	2
Alcoholic psychosis	1
Puerperal insanity	1
Feeble-minded	1
Total	114

**LEPER, TUBERCULOSIS, AND HOME FOR THE AGED AND INFIRM
DEPARTMENT.**

LEPER WARD.

(Dr. SAMUEL TEITZE, *Physician in Charge.*)

One of the innovations made during the year was the administrative reorganization of this department.

There was organized a squad of guards composed of the inmates whose duties are to maintain order and personal security. The leper guards coöperate with the civilian guards of the hospital in such places as are assigned to them, watching the conduct observed by all the leper inmates.

The rules and regulations for the leper ward are made by the chief of the hospital and put into effect by the guards. The leper guards wear uniforms and insignia to distinguish them from the other inmates.

All leper employees receive salary from the hospital, besides the usual gratuities, for services rendered.

The leper personnel of the department consists of—

- 1 Chief and foreman.
- 1 Assistant chief.
- 14 Guards.
- 1 Clerk.
- 3 Foremen.
- 2 Carpenters.
- 1 Mason
- 1 Gardener.
- 14 Helpers.

Routine work.—The physician in charge of the ward furnishes the chief of the hospital with a list of inmates physically fit to perform light work, which not only serves as physical exercise, but also as a means to devote some of their time to some useful pursuit of life.

Those who are selected to work are divided into groups and are detailed to perform light duties under the supervision of a foreman. The duration of their work never exceeds two hours a day.

The following tabulation shows the total number of lepers admitted during the year:

Nationality.	Male.	Female.	Total.
Americans.....	5	—	5
Filipinos.....	146	71	216
Others.....	3	—	3
Total.....			224

Discharged.—Thirty-five patients were discharged from this ward during the year. This number includes both cured lepers and the suspected cases which on examination were found to be negative for leprosy.

Transferred.—One hundred and sixty-nine lepers were transferred to the Culion Leper Colony during the year. One invalid woman who when examined was found negative for leprosy was transferred to the home for the aged and infirm.

Escaped.—Four lepers escaped during the year, one of them being a leper guard.

Died.—Six lepers in all died during the year; five of them died of pulmonary tuberculosis of advanced type, and one of chronic nephritis with acute heart dilation, and none died of leprosy.

Diagnosis.—The relative percentage of kinds of cases of leprosy admitted into the hospital during the year is—

	Per cent.
Tubercular	50.00
Macular	30.00
Anaesthetic	5.00
Mixed	15.00

Treatment.—Patients admitted to this department are examined clinically and microscopically for leprosy by a special committee, and those found positive for leprosy in both examinations are confined in the ward for lepers; those found negative microscopically but with apparent lesions are isolated in the ward for leper suspects; and, lastly, those found negative both clinically and microscopically are immediately released from the hospital after they have received certificates of discharge from the special committee. The leper suspects are subject to examination once a month, for three months consecutively and if found negative in these examinations, certificates for discharge from the hospital are immediately issued to them.

Those who are positive for leprosy clinically and microscopically, when during the course of their treatment the physician in charge notices any marked improvement of their lesions in the lapse of six months, dating from the date of their admission, they are again examined by the special committee, and if found negative are immediately transferred to the negative ward; these being subject to examination every six months thereafter, and after two years, or four consecutive negative examinations taken six months apart, are given certificates by the special committee for their discharge from the hospital.

Positive patients are furnished with better and more nutritive diet, tepid baths and treated with Dr. Mercado's formula by intramuscular injections. The quantity of the injection varies from one-half c. c. to ten c. c., according to the condition of the patient and the part to be injected.

Those lepers who contracted other kinds of diseases during their stay in the hospital were isolated in a separate apartment within the department for proper treatment and care.

Dr. Mercado's treatment.—Up to the present time this treatment is still used in this department and is administered by intramuscular injections, applied twice a week. The Mercado's treatment for leprosy consists of the following formula:

Resorcline	4 grams.
Camphorated oil }	60 c. c.
Chaulmoogra oil }	
Ether	10 drops.

Advantages of Dr. Mercado's treatment.—Many lepers have been cured by this treatment, and although it has been known for a considerable length of time, up to the present, it is probably the best remedy for the cure of leprosy in the Philippines.

Disadvantages of Dr. Mercado's treatment.—It is true that many lepers have been cured by Dr. Mercado's treatment, but it cannot be denied that some of those cured, after they had left the hospital and after the lapse of not a very great length of time, again became positive for leprosy. It is needless to enumerate the cases. It is only desired to state that Dr. Mercado's treatment cannot assure a permanent cure of leprosy.

Observation has shown that the cure of leprosy by Dr. Mercado's treatment takes a long time, especially in the nodular or tubercular form, where cure is almost impossible by this treatment. The injections give the patient terrible pain instantaneously, similar to "burning sensation," due to the medicine used; sometimes forming an abscess in the part injected and at times a small tumor is formed hard enough to remain permanent. Within twenty-four hours after the injection, frequently the patient has a chill, more or less severe, followed by fever, more or less high, sometimes continuous and at other times intermittent, which lasts not less than one day nor more than two weeks; the lesions become swollen and painful, accompanied by headache and bonache until edema is formed in the feet, together with loss of appetite for a more or less short time. These are the principal inconveniences, the other minor details not being worth mentioning.

Other treatments for leprosy are being experimented with, but no positive results have thus far been obtained.

Final disposition of leper cases.—The final disposition of leper patients is governed by the following rules of procedure observed by the committee on leprosy appointed to examine lepers and leper suspects:

(1) The committee shall meet at San Lazaro Hospital on the second and fourth Fridays of each month at 2 p. m. When necessary, special meetings may be arranged for at other times upon due notice given by the chairman.

(2) Any person who, after due examination by the committee, is found clinically and microscopically negative, to be released from quarantine, declared non-leprous and a certificate to that effect, signed by the chairman, furnished him.

(3) Any person who presents clinical evidence of leprosy, but on microscopical examination is found negative, to have weekly examinations made for a period of three months.

(4) All slides, whether positive or negative, properly labeled with patient's name, date, and whether positive or negative indicated, as the

case may be, to be kept for a period of not less than one month. All properly accredited persons to have the privilege of seeing such slides on days when the committee on leprosy is in session.

TECHNICAL COMMITTEE ON LEPROSY.

There were 468 persons examined for leprosy by the Technical Committee on Leprosy during the year, as follows:

	Positive.	Negative.	Doubtful.
Clinical	365	81	22
Microscopical	245	215	8

There were 32 certificates issued during the year to persons declared non-leprous by the Technical Committee on Leprosy.

TUBERCULOSIS WARD.

The following tabulated data shows the admission of patients in the tuberculosis ward during the year:

Nationality.	Male.	Female.
Americans	4	
Europeans	2	
Filipinos	266	131
Others	4	
Total	407	

Discharged.—The total number of patients discharged from this ward during the year is 228. The majority of these patients were discharged on their own request, leaving the hospital with their condition more or less improved. On being discharged such patients receive instruction from the physician in charge of the ward as to the necessary caution to be observed outside the hospital to their own advantage as well as to prevent the spread of the disease.

Transferred.—Four patients were found free from tuberculosis as the result of their clinical and bacteriological examination, but were suffering from old age and therefore transferred to the Home for the Aged and Infirm.

Escaped.—One patient, suffering from a very advanced stage of tuberculosis and brought to this hospital by the police authorities against his will, escaped.

Died.—Of the 407 patients admitted to the hospital during the year, 203 died, which means that the percentage of mortality was about 50.00 per cent. This percentage of mortality is exceedingly high, but it must be understood that not only the majority of these patients but almost 90.00 per cent of them

are suffering from the most advanced stage of pulmonary tuberculosis upon arrival at the hospital. Under such circumstances a high mortality rate is to be expected.

Care and treatment.—On admission patients are examined clinically by the physician in charge and later examined bacteriologically by the bacteriologist of the hospital. After this, the patient is given a bath, then vaccinated and after vaccination placed in a bed and furnished with a cuspidor containing disinfectant into which the patient is required to expectorate always.

The physician in charge writes the prescribed treatment and instructions on the corresponding chart of each patient, there being a routinary treatment applied to all patients in this ward, which consists as follows:

1. *Hydrotherapy.*—Every patient has to take a bath every day. Those who are strong enough have to go to the bathroom, but the weak patients are given sponge baths in their respective beds. In case of fever, no other treatment than hydrotherapy was given.

2. *Tonics and reconstituents.*—Tonics are given in 5 c. c. three times daily before each meal. Two kinds of tonics are given alternately weekly for the purpose of making the tonic more palatable to the patients. Among the tonics used the I. Q. S. Elixir is the most frequently used. One tablespoonful of cod liver oil emulsion is given also to every patient three times daily.

3. *Cough mixture.*—For cough of the tuberculous patients either Brown's mixture, Stoke's expectorant or elixir of heroine and terpine hydrate are used, a tablespoonful being given to each patient three times a day, morning, afternoon, and evening. Sometimes other medicines are given, should the case require them.

4. *Diet.*—American or Filipino full diet is regularly given to all patients in this ward, with the exception of those cases which really need liquid diet.

5. *Indigestion.*—It has been observed that most of these patients are suffering from poor digestion, and in all such cases elixir of pepsine was added to the routinary treatment, one tablespoonful after each meal.

6. *Hemoptisis.*—The hemoptisis to which these tuberculous patients are usually victims, are treated by an immediate injection of morphine sulphate $\frac{1}{8}$ grain with atropine sulphate $\frac{1}{100}$ grain, followed by injections of emetine hydrochloride $\frac{1}{4}$ grain two or three times daily until the hemoptisis is stopped. Aside from this, sometimes the patients are given calcium chloride

mixture or fluid extract of ergot. Ice cap is applied continuously over the patient's chest always. In severe cases of hemoptisis, the patient is kept in "Fowler's position."

Only advanced cases of tuberculosis are admitted to this hospital, although sometimes incipient cases are admitted under stress of emergency, and in this case the "anti-tuberculine sensitized vaccine" of Dr. Hilario was used for trial and study, but so far, no good results have been obtained. In other cases the ampules of "Chaulmoogra anti-Koch" were used, which also failed to give satisfactory results. Lastly, the daily injections of sodium cacodylate in solution of 10 per cent were used and this gave satisfactory results.

HOME FOR THE AGED AND INFIRM.

The home for the aged and infirm occupies one modern, sanitary building, divided into two compartments, one for the males and the other for the females.

On December 31, 1919, there were 50 inmates in this home, the majority of whom were suffering from old age or senile debility, and the remainder were invalids, such as blind persons, paralytics, etc. Only a few of these patients require medical treatment.

SAN LAZARO HOSPITAL LABORATORY.

The following table shows the work done in this laboratory since its installation in April, 1919:

	Specimens.
Urine	84
Stools	2,104
Sputum	446
Blood	214
Pus	360
Cerebro-spinal fluid.....	3
Miscellaneous	4
Total.....	3,215

SUBSISTENCE.

Subsistence supplies:

Balance on hand January 1, 1919.....	P3,463.55
Purchased	226,881.97
Total	230,345.52
Consumed	225,371.25
Balance on hand December 31, 1919.....	4,974.27
Average cost of subsistence per day.....	P616.59
Average number of persons subsisted per day.....	882.00
Average cost per person per day.....	0.699

RECOMMENDATIONS OF THE CHIEF OF THE HOSPITAL.

1. That the rooms at present occupied by the pharmacy and commissary be converted into an office, to be used as the main office of the hospital.

2. That the present office be fitted up for a pharmacy and waiting room.

3. That a two story concrete building be constructed for the garage.

4. That a dormitory for nurses be constructed, with 60 beds capacity, building to be of reinforced concrete and tile roof.

5. That a dormitory for employees be constructed, with 60 beds capacity, building to be of reinforced concrete with tile roof.

6. That the building formerly occupied by the School of Veterinary Science be secured, the upper story to be used as the residence for the superintendent of the hospital and the lower story for the pharmacy.

7. That a pavilion for contagious diseases be constructed, with capacity for 150 beds, structure to be of concrete.

8. That an additional building for the aged and infirm be constructed, structure to be of reinforced concrete and tile roof.

9. That an appropriation of ₱100,000 be obtained to commence the work of reconstructing the leper department. This work should be done by sections, destroying one wing at a time and rebuilding it before other work is started.

10. That an artesian well be drilled and tank and pumping apparatus installed, tank to have at least 10,000 gallons capacity.

11. That the present crematory and morgue be repaired and an amphitheatre added to accommodate medical students.

BAGUIO HOSPITAL.

During the months of March and April so many patients sought admission to the hospital that several had to be accommodated in the halls on reclining chairs, owing to lack of space in the wards and private rooms. On account of the necessity for isolating contagious cases, not only were all the hospital tents put up but two additional tents were rented from the Bureau of Public Works and two others borrowed from the city of Baguio.

For the coming year, the same lack of accommodation seems certain, because at the present time, early though it is in the season, all the private rooms are occupied, and the wards have only three or four empty beds. Besides, a few cases of influenza have already begun to appear in the city of Baguio, although not as severe as in the previous year.

The building for the contagious ward was finished last October, and it is now affording accommodation to cases of small-pox and varioloid, besides other contagious diseases.

In order to remedy the unhygienic conditions of charity wards Nos. 3 and 4 of the main building of the hospital, the removal of the partition between them was recommended to the district engineer, and they have been converted into a single spacious ward, well ventilated and with plenty of light, to the great convenience and advantage of patients and nurses alike.

During the rains and storms of last August, the slide near the hospital made considerable progress toward the building and for a time it was feared it might reach its foundation. However, the slide stopped at about twenty meters from the building. It is strongly recommended that the construction of the new hospital in another place be carried out, if possible in 1920.

The necessity for a service building has long been felt and if a new hospital is to be built, the construction of a service building is, among other things, also recommended.

A number of articles of equipment, besides commissaries, were condemned by the Auditor during the latter part of the year. Most of the articles condemned seemed to have accumulated for more than two or three years.

The cost of subsistence during the year 1919 was high in spite of every effort made by the administration to run the hospital at a low cost, the general cost per capita for the whole year being ₱1.07. If the present high prices of food continue, little can be expected to have this average lowered. However, it is believed that some improvement in this direction may be attained this coming year. Already at this date, a system by which a daily check on the cost of food has been perfected whereby any appreciable increase of the cost of food can be readily noted. With the coöperation of a more or less experienced dietitian, it is hoped that an improvement in this particular will be accomplished in a marked degree.

Due to the fact that there is no established pharmacy in the City of Baguio, it devolves upon the Baguio Hospital to dispense medicines to the public at large as much as it can afford. While the appropriation for drug is indeed very small, still the Baguio Hospital is desirous to be of the greatest possible service to the community in which it is located. The City of Baguio being a health resort, all kinds of people, particularly the rich ones, come here at any time of the year, depending on the hospital for their medical supplies, and, furthermore, not a few physicians practicing privately in Baguio, send their prescriptions to the hospital pharmacy. It is felt that their estimation of

the hospital would be greatly lowered, were their requests disregarded, or their wants along this line but insufficiently supplied, especially as there is no other place than the Baguio Hospital pharmacy from which to obtain their medical supplies. For this reason this dispensary requires a very complete line of expensive drugs on hand all the time.

That the hospital may have a record of what the patients' estimation of its efficiency is, a blank form, to be filled out by the patients, was instituted during the latter part of 1919, and by this means the necessary data may be obtained to improve or remove any defects in the services rendered by the hospital.

Other improvements that were introduced are the index cards of diseases and names of patients that have been admitted into the hospital. These indices will facilitate any research work that may be undertaken and make it very easy to locate the record of any patient admitted into the hospital.

PERSONNEL.

- 1 chief of hospital.
- 1 superintendent and cashier.
- 1 chief nurse and dietitian.
- 7 nurses.
- 1 clerk.
- 1 cook.
- 1 gardener.
- 8 helpers, male.

ADMISSION OF PATIENTS.

There were 683 patients admitted to the hospital during the year, of which 293 were medical cases, 133 surgical, 68 obstetrical, 11 eye, ear, nose, and throat, and 178 pediatrics. There were 26 patients admitted to the contagious department and 43 to the tuberculosis cottages. The number of patients admitted this year is less than that of last year, the increase of last year being due to the influenza epidemic.

Financial statement.

	Allotments.	Disbursements.	Balance December 31, 1919.
Salaries and wages	P15,316.00	P11,157.51	P4,158.49
Traveling expenses of personnel	600.00	45.12	554.88
Freight, express and delivery service	1,200.00	1,040.14	159.86
Postal, telegraph and telephone service	300.00	237.58	62.42
Illumination and power service	900.00	1,126.73	(226.73)
Miscellaneous service	1,300.00	2,070.30	(770.30)
Rental of building		73.35	(73.35)
Consumption of supplies and materials	18,000.00	30,409.10	(12,409.10)
Maintenance and repair	300.00	401.90	(101.90)
Acquisition of fixed assets	2,000.00	3,611.82	(1,611.82)
Total	39,916.00	50,173.55	(10,257.55)

Receipts.

Accommodation and subsistence of patients, prescriptions filled, maternity and operating room fees and other services.....	₱8,507.94
Sale of medicines and other supplies.....	326.41
Voluntary contributions .....	.02
Fines and forfeitures.....	2.00
Miscellaneous receipts	23.10
Total	8,859.47
Collections	7,737.40
Outstanding December 31, 1919.....	1,122.07

BAYOMBONG HOSPITAL.

During the year, 101 patients were admitted into the hospital. One hundred of this number were discharged and one died. Most of the patients were from Bayombong.

All sick people are urged to come to the hospital for treatment, but with little success as the people believe more in superstition than in medicine.

The personnel of the hospital consists of the district health officer, who acts as Chief of the Hospital, 1 nurse, 1 hospital attendant, 1 janitor, and 2 servants.

Expenses incurred during the year are as follows:

Consumption of supplies and materials, medicines included.....	₱2,389.59
Light	128.00
Equipment	1,500.00
Salary and wages of personnel with subsistence, laundry, and hospital's laundry included.....	2,078.22
Rentals of buildings.....	300.00

RECOMMENDATIONS.

1. The construction of a new hospital with better facilities.
2. The construction of quarters for the physician.
3. The construction of quarters for the nurses.
4. The appropriation of at least ₱6,000 for the equipment of said hospital.

BILIBID HOSPITAL.*Salaried Personnel of Bilibid Hospital.*

- 1 Chief, Division of Sanitation, Philippine Health Service.
- 1 Resident Physician, Philippine Health Service.
- 1 Chief Nurse, Bureau of Prisons.
- 1 Pharmacist, Bureau of Prisons.
- 1 Surgical Nurse, Bureau of Prisons.
- 1 Sanitary Inspector, Bureau of Prisons.
- 3 Practicantes, Bureau of Prisons.
- Prisoner Assistants.

Each of the main departments of the Prison located outside of Manila is provided with a hospital, an officer of the Philippine Health Service being detailed in charge.

MORBIDITY.

The majority of admissions to the hospital from newly arriving prisoners were due to intestinal parasites, amoebiasis, tuberculosis, contagious skin diseases, and drug habits.

The majority of admissions to the hospital of old prisoners were due to tuberculosis, respiratory diseases, hemorrhoids, hydrocele, hernia, and rectal fistula.

MORTALITY.

Computed on the actual number of prisoners passing through Bilibid proper, into the deaths actually chargeable to that institution, gives a general death-rate of 17.10 per thousand, of which 7.60 per cent is for general diseases and 9.50 per cent for pulmonary tuberculosis.

Computed on the total actual number of separate and distinct prisoners passing through Bilibid, Manila, P. I., and all outside stations, viz.; 10,091 prisoners, into all deaths wherever occurring gives a general death-rate of 18.70 per cent for the entire Bureau of Prisons.

BIRTHS.

Four children were born to women serving as prisoners within Bilibid, 3 males and one female, all illegitimate.

INTESTINAL PARASITES.

Thirty-one and ninety-seven hundredths per cent of all admissions to the hospital were from intestinal parasites, and in addition to this 451 cases were treated as complication of other diseases showing a marked decrease as compared to previous years. All prisoners entering Bilibid are quarantined from 5 to 15 days, during which time stool examinations are made.

FILARIA.

A total of 2,292 blood examinations were made for filaria; all newly arriving prisoners have their blood examined for diurnal and nocturnal appearing micro-filaria while undergoing quarantine. Of these 2,063 were new arrivals, showing 26 positives, or 1 per cent. Out of the 2,292 blood examinations 219 were returned prisoners, of these two positives were found, or 1 per cent. No cases of filaria are transferred from Bilibid to any outside station. Formerly all cases of male filaria were

segregated in a dormitory by themselves and were required to sleep under mosquito nets. This procedure has been discontinued. In view of the fact that the mosquito has been eliminated to a great extent within the prison compound, it was not deemed necessary to continue the isolation of filaria-carrying prisoners.

No filarial cases encountered during the past year have shown any pathological effects from filarial infection.

VENEREAL DISEASES.

Gonorrhœa.—Out of 7,554 examinations of urine 58 were found positive for gonorrhœa. A total of 75 cases of gonococcus infection were treated during the year. All cases of gonorrhœa or those showing gonococcus infection were segregated in a division of the contagious department and held there until free from infection.

Syphilis.—Twenty cases of syphilis were treated in the hospital during the year. Among those treated in the hospital were primary, secondary, and tertiary forms, also one case of locomotor ataxia, 8 cases of syphilitic ulcers. 22 Wassermann examinations were made during the year of which 7 were positive.

CHOLERA VIBRIO EXAMINATIONS.

During the year 91,715 stool specimens were examined for cholera carriers, of this number only 16 were found to be carriers. These 16 cases were immediately isolated within the quarantine camp and, notwithstanding that cholera raged outside of Manila in its most violent form, Bilibid Prison had only 2 cases of cholera, showing that with proper precaution no matter how great a number of people are segregated there is no danger.

TYPHOID FEVER.

Six Widal reactions were made during the year of which one case was reported positive. This case of typhoid fever was isolated, as a result of which no more cases of typhoid developed within the prison compound.

CONTAGIOUS SKIN DISEASES.

Four hundred fifty eight cases of contagious skin infections were treated during the year, viz:

Dermatitis	23
Dermatosis	2
Eczema	5
Herpes Zoster.....	5
Scabies	56
Tinea imbricata.....	367

Of these, eight remained in the isolation shed at the end of the year.

RESPIRATORY DISEASES.

Respiratory diseases constitute one of the gravest of pathological conditions arising among the prisoners. During the past year there were treated 133 cases of tuberculosis of which 83 ended fatally, 35 cases of lobar pneumonia with 23 deaths, 31 cases of asthma, 12 cases of pleurisy, and one case of bronchial pneumonia. Although diseases of the respiratory system have decreased over previous years due, in all probabilities, to the better hygienic surroundings, nevertheless the rate of mortality from tuberculosis is so high that some steps should be taken to remedy this condition. Suggestions are made in the latter part of this report.

DRUG HABITS.

Fifteen cases of morphinism and 212 cases of opiumism were treated during the year. The treatment of these cases has given indefinite results, as in the majority of cases, after discharge from prison they revert to the same habit, resulting in re-conviction and re-admission to the hospital.

BERIBERI.

Fifty-two cases of beriberi were admitted to the hospital all of which developed outside of the prison walls; of these, 50 cases were cured and 2 remained in the hospital at the end of the year. All these cases have been treated by change of diet, tonic of iron, quinine and strychnine, which has given excellent results.

CONTAGIOUS DISEASES.

With the exception of cholera carriers considered in the previous page, 20 cases of contagious diseases were treated during the year, as follows: 16 cases of mumps, one measles, one varicella and two varioloid. This is a marked decrease over 1918.

MENTAL DISEASES.

During the year there developed within the prison 22 cases of insanity, viz.: 1 dementia praecox, 2 melancholia, and 19 other forms of undetermined insanity. Heretofore all cases of insanity were committed to San Lazaro Hospital for treatment, this being the only hospital for the treatment of the insane in the Philippine Islands. During the latter part of 1919 there occurred an outbreak of the insane in San Lazaro Hospital among the prison insane confined there which resulted in the

death of one guard. The chief of San Lazaro Hospital Division thereupon returned all cases of prison insane held at San Lazaro Hospital to Bilibid Prison as cured; as a matter of fact, these insane prisoners were in the same disturbed mental condition upon their return to Bilibid Prison as when they were committed to San Lazaro Hospital for treatment. There is absolutely no place within the prison compound where the insane can be kept. At the present time they are being housed in the cell-house where death sentenced prisoners are kept and where the gallows is constructed. In every modern prison institution proper facilities are arranged for the care of prison insane, and it is not believed that it is just that prisoners who are sick should receive the treatment that these insane prisoners are subjected to; neither should the other prisoners who are compelled to work during the day be subjected to the noise of these insane during their hours of rest.

INFLUENZA.

During the year there were 450 cases of Spanish influenza developed within the prison. None of these cases ended fatally. This was entirely due to the rapidity with which treatment was administered and the proper care to prevent the development of influenza.

DYSENTERY.

During the year there were 4 cases of bacillary dysentery with 2 deaths, 137 cases of amœba coli, 4 cases of amœbic dysentery, 62 of dysentery, and one of entamœbic; a total of 212 with a mortality of five. These cases developed within Bilibid, notwithstanding that every precaution was taken in the handling of drinking water. It has been noticed that whenever prisoners were fed on native water-cress (Kangkong) they invariably developed diarrhoea, and it is believed that this food was the cause of the dysentery mentioned above. The use of "Kangkong" or native water-cress as a food has been prohibited since this discovery was made and since then no more cases of dysentery occurred.

DENTAL DISEASES.

There were treated within the hospital 175 cases of dental diseases.

HOUSING OF PRISONERS.

The buildings used for the housing of prisoners are entirely inadequate for the purpose, as at the present time the buildings have to be overcrowded in order to accommodate all the pris-

oners. There is a general average of from 150 to 200 prisoners within a brigade that under ordinary circumstances should not contain more than one hundred.

Laundry.—The wall on the north side of the building should be removed in order to provide more floor space and more circulation of air.

Silver shop.—This room is entirely inadequate for the number of men employed therein. It is dirty, foul smelling, poorly ventilated and poorly lighted and these defects should be remedied. To this end it is recommended that the space be doubled; that a proper hooded stove be furnished in order to carry up the objectionable fumes arising from the work; that proper sanitary appliances be installed to carry off the waste matter, etc., arising from stoves in use.

Building No. 2, Presidio.—This building is unfit for use in any form and is a menace to the health of the prisoners. It should be removed at the earliest possible date.

GENERAL MEDICAL SURVEY.

The following is the result of the annual general medical survey of prisoners in Bilibid, Manila, which took place from September 1 to November 28, 1919, inclusive. Two thousand seven hundred seventy-six prisoners, including females, were examined physically and microscopically, of which 1,022 or 36 per cent, were found positive for amoeba and intestinal parasites:

Male prisoners examined.....	2,636
Female prisoners examined.....	140
Total	2,776

1,655 or 60 per cent gave a history of smallpox.

422 or 15 per cent gave a history of malaria.

7 gave a history of syphilis.

101 or 4 per cent gave a history of gonorrhoea.

48 or 1 per cent showed deformities of different parts of the body.

339 or 12 per cent showed skin diseases (various classes).

200 or 7 per cent showed mouth and teeth diseases.

35 or 1 per cent showed eye diseases.

6 showed ear defects.

114 or 4 per cent showed tuberculosis (clinically and microscopically).

1 showed exostosis.

5 showed fistula in ano.

14 showed hydroceles.

12 showed hemorrhoids.

9 showed inguinal hernia.

12 showed syphilitic and tubercular.

11 showed tonsilitis.

7 showed varicocele.

8 showed varicose veins.

RECOMMENDATIONS.

Births.—It is recommended as heretofore, both for the sake of mothers and children, that short termed pregnant women be sent elsewhere than to Bilibid Prison for punishment. It is unjust that a prison sentence be inflicted upon a child before it is born, and that it be burdened with this stigma throughout life. There is at the present time an orphan within the prison hospital, two years of age, whose mother died of tuberculosis and who has no relatives to take care of it. Repeated efforts have been made to have this child transferred to the orphanage for indigent children but without success, the chief of the orphanage stating that the child was too young to be admitted.

Furthermore, that mothers be prohibited from bringing children to prison; and in such cases in which there are no relatives to care for the latter, that they be turned over to the orphanage for care while mothers are serving sentence.

Tuberculosis.—Due to the increased number of cases of tuberculosis in Bilibid Prison and the high mortality-rate amongst them, it is imperative that all cases of tuberculosis developed here among long termed prisoners be transferred to the Penal Colony at Iwahig at the earliest possible moment where they can live an outdoor life, as almost all cases of tuberculosis admitted to the hospital invariably proved fatal.

Dental surgeon.—Bilibid Prison should be provided with the services of a dental surgeon as at the present time prisoners have to be sent under the charge of prison guards for dental treatment to such dentists within the city as they may select. It is believed that, taking into consideration the time wasted and the expense incurred in furnishing guards, etc., it would be to the best interest of the service to either have a resident dental surgeon, or one who could devote from two to three hours daily to attend the prisoners.

Morgue.—A morgue should be constructed separately from the hospital as at the present time the corpses are kept within a small room on the main floor of the hospital building, and, as is often the case, for a period of 24 hours, during which time the smell becomes so marked as to cause a great deal of annoyance to everybody within the hospital building.

BONTOC HOSPITAL.

The hospital buildings, nurses' home and doctors' quarters are still in good condition though it is believed that some repairs should be made. In order to prevent future deterioration of the buildings, a general repainting of all the buildings is imperative and minor repairs are also necessary.

At the request of the former chief of the Bontoc Hospital, ₦25,000 was set aside for the construction of two additional buildings,—one for an isolation pavilion and the other for a new kitchen and dining room for the hospital employees. But owing to the press of work in the office of the district engineer, this undertaking could not be begun until the year 1920. With this arrangement, advantages will be obtained as follows:

(a) The separation of the dangerous communicable diseases from the general diseases by which transmission of infection from contagious cases to noncontagious cases will be permanently solved.

(b) The overcrowding in the free wards to the detriment of the service and discomfort to patients will be discontinued.

(c) The application of modern hygiene will be well in hand.

(d) The disagreeable odor of various foods and unnecessary noise from the present kitchen which produce much discomfort to the patients in the private rooms will be obviated with the new arrangement.

(e) It will provide available space for the dining room for the staff and for the unskilled laborers. At present the unskilled laborers do not have an appropriate dining room and they eat in any corner they may find convenient.

HOSPITAL ATTENDANCE.

The majority of the natives of the Mountain Province are not yet educated to the point where they appreciate the benefits obtained from a modern hospital. Another serious difficulty encountered in the task of gaining their confidence is that in certain diseases it is necessary to limit the patients' diet, and whenever this is done they immediately complain, saying that the hospital tries to starve them to death. But it is believed that many of them realize the good results of the treatment given them, even though it is hard, patient, and missionary-like work to subdue their ancient customs. To overcome their pernicious belief, the present plan of visiting the remote places in a missionary way and at the same time preaching the gospel of hygiene, step by step, to improve their sanitary condition, is going on in the most practical method. It is believed that by visiting their rancherias and giving conferences on the practical points of hygiene their confidence will be gained and consequently overcome their ancient prejudice.

Admission of patients.

Year.	Admitted.	Discharged.		Died.	Remain- ing in hospital at end of year.
		Recov- ered.	Unre- covered.		
1917	610	558	2	22	28
1918	710	657	5	20	28
1919	484	386	2	21	25

During the year 1918 there were 710 patients admitted, but during the same year two epidemics of grippe swept this locality which accounts for the large number of admissions, while there was not a single epidemic during the year 1919.

Most of the cases admitted during the year 1919 were medical and dermatological in nature. The maternity cases admitted during the year have almost doubled the number for the years 1917 and 1918, but the most striking feature is that more than one-third of the maternity cases admitted were Igorotas of the most primitive custom. This may be considered a marked progress, for since the foundation of this hospital up to the present time, no records of importance are available with regard to admissions of cases of this nature, for the Igorots have always considered that their means and methods of attending deliveries are better fitted for them.

Miscellaneous records.

Year.	Maternity cases.	Major operations.	Minor operations.	Laboratory examinations.	Average hospital days per patient.
1917	18	(a)	(a)	(a)	(a)
1918	13	8	122	149	13.22
1919	23	6	163	200	15.73

^a No record.

LABORATORY WORK.

According to records the laboratory examinations made during the year are as follows:

Urine	76
Feces	66
Blood	37
Sputum	20
Gastric content	1
Total	200

In addition to the above laboratory examinations there were milk and water examinations which were not recorded.

The present laboratory of Bontoc Hospital, with but few exceptions, may be considered as an up-to-date and almost complete one.

OUT-PATIENT DEPARTMENT.

During the year 1919 there was a little increase in the number of cases treated in the dispensary of Bontoc Hospital as compared with 1918, as shown by the following table:

Year.	Cases.	Treatments.
1917.....	8, 115	10, 544
1918.....	2, 068	5, 395
1919.....	2, 352	7, 620

Most of the cases presented for the year 1919 were surgical and dermatological cases. Especially was this true of dermatological cases among the natives on account of their methods of living, being completely without the most elemental knowledge of hygiene, and among these dermatological cases, the tinea imbricata and scabies were the most prominent.

DANGEROUS COMMUNICABLE DISEASES.

There were 7 cases of varicella admitted and isolated during the year, no death being registered. All these cases were found within the district of Bontoc.

PERSONNEL.

- 1 Chief.
- 1 Resident Physician.
- 1 Superintendent.
- 1 Pharmacist.
- 1 Chief Nurse.
- 4 Nurses.
- 1 Cook.
- 1 Assistant Cook.
- 1 Seamstress.
- 1 Gardener.
- 4 Laundry helpers.
- 8 Houseboys.

SUPPLIES.

The regular supplies of the hospital are obtained mostly through the regular requisitions and in this connection it should be noted that the supplies for the hospital alone can hardly be estimated due to the fact that these supplies are also issued to the dispensaries now in operation in the different parts of the subprovince of Bontoc. Drugs, disinfectants, linen and other miscellaneous supplies are also issued to the different dispensaries, but the bulk of supplies is, of course, used in the Bontoc Hospital.

Subsistence.

Year.	Open market purchases.	Collections.	Subsistence per capita.
1917	P3,061.34	P1,319.91	P0.36
1918	3,036.64	1,625.99	0.50
1919	2,766.54	1,868.22	0.54

Prescriptions.

Year.	Prescriptions filled.	Average per month.	Average per day.
1917	5,626	468	16
1918	6,002	500	17
1919	5,664	472	16

In connection with hospital supplies it should be noted that everything seems to have increased in price, especially drug supplies, which made the expenses of the hospital high. The subsistence supplies also went high especially in this place where canned foods are necessary during the rainy season, and canned foods are usually dear. In this connection a more liberal appropriation for consumption of materials and supplies is deemed necessary.

HOSPITAL GROUNDS AND GARDENING.

As has been reported previously, the hospital grounds are in a sanitary condition due to the location and surroundings. Back of the hospital ground is a hill, on both sides are rivulets and on the front is a river and the general form is sloping so that at any time of the year no water remains stagnant.

Gardening has been carried on especially during the wet season when almost any plant could be grown. At present there are three lots being used for gardening and among the plants grown are papayas, bananas, beans, tomatoes, camotes, potatoes, and other quick-growing vegetables.

In addition to gardening, there was also established in the latter part of the year a poultry farm. The hospital is also raising pigs, though not on a large scale, and the chickens and the pigs are being fed with the food remnants or garbage of the hospital. In this way very little garbage is being thrown away by the hospital and only that of no value is thrown away.

DISPOSAL OF GARBAGE AND OTHER WASTES.

Waste water, excreta, urine, and other hospital liquid wastes are disposed of through sewers leading to a place the least accessible to people while garbage proper of the hospital is thrown in a place far from the public.

CUYO HOSPITAL.

The building in which this hospital is housed is inadequate for a hospital, but will serve the purpose until the proposed new hospital is built.

The hospital has 8 beds in all, 6 for patients and 2 for attendants on duty. The beds for the attendants on duty in the hospital are not enough, because there are two nurses and the physician. The number of beds for the patients was apparently sufficient, for there were but few instances when extra beds had to be used during the year, and the number of beds for patients need not be increased until the new hospital is ready.

Admission and discharge of patients.—There were in all 151 patients admitted into the hospital during the year, 2 patients remaining over from last year, making a total of 153 patients treated in hospital. Of this total 148 were discharged (120 recovered and 28 improved), and 5 died.

The most important diseases treated were: Malaria, 28 cases; diseases of the stomach, 17 cases; intestinal parasites, 10 cases; and influenza, 10 cases.

Personnel.—The personnel of the hospital at the end of the year consisted of one chief, two nurses, one clerk, one laundryman, and two servants.

Dispensary.—During the year there were 2,476 dispensary patients treated in the hospital, 817 dressings made, and 1,659 prescriptions filled.

Municipal sanitation.—The chief of the Cuyo Hospital acted as local health officer for the municipality of Cuyo during the year.

Smallpox vaccination was carried out more extensively than last year; 4,063 people having been vaccinated.

The Antipolo system of closet was introduced this year.

In the municipality of Cuyo there is only one sanitary inspector to attend to all the sanitary work, such as disinfecting, vaccinating, and other duties.

FINANCIAL STATEMENT.

Open market purchases.....	P1,000.57
Other expenses as stamps, fuel, etc.....	218.64
Coco for bandages.....	10.50
Laundry for the nurses.....	103.89
Rent for building.....	180.00
Payroll of employees.....	776.00
	<hr/>
Total.....	2,289.60

SUBSISTENCE.

Balance on hand, December 31, 1918.....	₹84.00
Purchased through Bureau of Supply.....	397.77
Purchased on open market.....	1,000.57
Total	1,482.34
Consumed during the year	1,374.71
Remaining on hand, December 31, 1919.....	107.63
Total	1,482.34
Average cost of subsistence per person per day for physician and nurses	0.879
Average cost of subsistence per person per day for patients and employees.....	0.269

NOTE.—The voluntary contribution fund for the construction of the proposed new hospital was raised to the sum of ₹2,000.

KIANGAN HOSPITAL.

This hospital is temporarily housed in a building of mixed material construction, the new hospital not yet having been completed.

HOSPITAL APARTMENTS.

1. Free Ward:
 - Male apartment, 15 beds capacity.
 - Female apartment, 15 beds capacity.
2. Private rooms:
 - None.
3. Clinical Laboratory, Pharmacy and Dispensary apartment.
4. Main Office.

The capacity of the free ward is sufficient for 30 beds only, divided into two rooms, one of them for the female patients and the other for the male patients.

The present arrangement of separate apartments is very defective due to the inadequacy of the building, nevertheless the hospital has been a very great blessing and comfort to those who came in for treatment.

The kitchen, bath-room, and toilet are housed in a temporary structure of light material.

PERSONNEL.

- 1 Physician (Subdistrict Health Officer).
- 1 Nurse.
- 1 Sanitary Inspector (Detailed in hospital).
- 1 Cook.
- 2 Houseboys.
- 1 Laundress.

ADMINISTRATIVE DIVISIONS.

1. General Administration (Main Office).
2. Nursing Department.
3. Pharmacy and Drug Room.
4. Unclassified service.

The general administration or office work is performed by the subdistrict health officer, who also acts as resident physician of the hospital.

There is one female nurse in charge of the hospital and field work. The dietitian has charge of all open market purchases so far as subsistence and accommodation of the patients is concerned.

The pharmacy and drug room is under the care of the subdistrict health officer, who, at the same time makes up the routine stock preparations.

The unclassified service includes cook, laundress, houseboys, and their miscellaneous duties, and are all subject to the orders of the resident physician.

SERVICES.

1. In-patient department.
2. Out-patient department.
3. Gardening service.
4. Plumbing service.
5. Illumination service.
6. Water supplies.

In-patient department.—There were 267 patients admitted during the year, as compared to 342 during 1918.

Patients remaining in hospital, December 31, 1918.....	17
Patients admitted during the year.....	267
Total	284
Discharged during the year.....	253
Died during the year.....	12
Patients remaining in hospital, December 31, 1919.....	19
Total	284

OPERATIONS PERFORMED.

Major operations	0
Minor operations	40

The percentage of deaths, outside of epidemics is 4.5 per cent.

The prevailing disease in the subprovince of Ifugao was malarial fever, but it is decreasing due to the preventive sanitary measures instituted. Most of the people attacked by this disease were treated or cured in the hospital or dispensary. The

percentage of malarial cases, as compared to the total number of cases, is as follows:

Average percentage of cases.....	41.6
Average percentage of deaths.....	2.8

One difficulty encountered in treating Ifugao patients in the hospital was that practically all of them were loath to submit to liquid or soft diet. They, however, readily submitted to any kind of medical treatment prescribed for them.

Out-patient department.—The out-patient department or dispensary comprises those coming to the hospital for medicines, dressings, treatments, etc.

Cases and treatments.

	1918	1919
Cases	400	573
Treatments	605	349
Total	1,005	922

As this hospital is only a temporary hospital, the gardening during the year did not improve at all.

The plumbing service was unsatisfactory during the year, due to the fact that it was of a temporary character, but it was kept in a sanitary condition.

The illumination service consisted chiefly of petroleum burning lamps and was unsatisfactory.

The sanitary condition of the hospital was maintained during the year. The routine work in regard to cleaning was kept up and no alterations were made.

The hospital is supplied with crystalline water which comes from a spring located on a hill with sanitary protection. The water is conducted to the hospital by means of pipe.

The bathroom is constructed of light material, but it was kept in a sanitary condition.

Clinical laboratory.—The clinical laboratory is located in the dispensary room. It contains one microscope and accessories for bacteriological examinations. Fifty-six laboratory examinations were made during the year.

Financial statement.

Expenses.	Expenditures.	Appropriations.
Salaries of employees and officers	P6,417.74	P7,024.00
Consumption of supplies and material	1,619.45	2,000.00
Illumination and power service	156.00	200.00
Building repair service	None	None
Total	8,193.19	9,224.00

RECOMMENDATIONS.

The following additional personnel is recommended for the new hospital as soon as it is in operation:

1. One superintendent to have charge of the hospital and properties, under the direction of the subdistrict health officer.
2. One clerk to assist in the clerical work.
3. At least three nurses should be allowed this hospital in order to properly care for the patients.
4. Four houseboys are necessary and should be allowed for the other important services of the hospital.

CULION LEPER COLONY.

CONSTRUCTION.

COLONY PROPER.

Leper schoolhouse.—The leper schoolhouse which was started in March, 1918, was completed in March. The building is of the sanitary model house type, sufficiently ventilated and provided with accommodations for 400 pupils.

The Imhoff septic tank.—The Imhoff septic tank which was started in 1918 was not completed during the year, due to lack of funds, no appropriation for same having been provided.

Tenement house.—A tenement house of the new sanitary model house type, which was started in January, was completed in August. This building is 10 by 16 meters in size and its floor plan consists of four ample rooms accommodating 12 persons each, four small rooms and four kitchens. The front part of the building is provided with a two-meter veranda.

Gate.—A new gate separating Balala from the Colony proper was started in April and completed by the end of the year. It is of strong reinforced construction provided with a small room which is used by the disbursing officer when paying gratuities and salaries to the lepers in the Colony. This gate serves at the same time as a shelter for the lepers while making merchandise transactions with non-leper vendors without the least possible chance of transmission of infection as it has a strong iron fence with a small window and a cement basin containing a disinfecting solution wherein all money is disinfected.

Sanitary barrio.—As in previous years, the lepers have always been encouraged to transfer their houses or build new ones in the sanitary barrio to the extent that said part of the Colony has now increased in the number of houses and population. It is believed that in the coming year, 1920, this barrio will necessitate electric illumination. Another need which should be filled as soon as possible is the installation of public bath and toilet sheds of the same model as those used in the upper district.

With the increase of the area of this barrio the closing of the present cemetery adjoining it becomes urgent.

CONSTRUCTION IN BALALA.

Resident physician's quarters.—A new building of the sanitary model house type was constructed and completed during the year. This building is 14 by 13½ meters in size, its floor plan having one sala, one dining room, one bed room, one bath and toilet room, and is surrounded on two sides by a three meter veranda and by a 1½ meter veranda on the other two sides.

Employees' quarters.—The old frame building located in the upper road and formerly used as the *sisters'* quarters was repaired and converted into a double house providing ample room and accommodations for two families. This building will increase the number of quarters for employees of the Colony.

New lighter.—A new lighter which was given the name of "Damien" was built and put into commission during the year. It consists of a "V" shaped hull 36 feet long and made of lauan wood. This lighter has filled a long-felt need for the hauling of materials from the lumber camps to the Colony.

CONSTRUCTION STARTED DURING THE YEAR IN THE COLONY PROPER.

Hospital ward.—A new hospital ward of the sanitary model plan was started in September and will probably be completed in the early part of 1920. This new pavilion is located in the hospital grounds and will add 60 beds to the capacity of the hospital.

Tenement house.—A tenement house of the same style as above described was started in October and will probably be completed in the early part of 1920. This building when completed will provide accommodations for 48 persons. It is located on the southwest side of the Worcester Plaza just above the sanitary barrio.

"Get-well" club building.—A wooden frame building with galvanized iron roofing was started during the year and will probably be completed about the end of March, 1920. It is intended as a dwelling for its members. The floor plan consists of one living room, one small room for the caretaker, one kitchen and one pantry. The front part of the building is provided with a 1½ meter veranda.

Excavation of hospital site.—The excavation of the hospital site which was started in 1918 was continued throughout the year. When this excavation is completed it will give enough room for two additional hospital pavilions.

MAINTENANCE.

Chief's house.—The chief's house which had a defect consisting in a leak in its roof was repaired by reinforcing the inside of the roof with *certainteed sheets*.

Reconstruction of sea-wall and dock. During the month of August, several typhoons visited the Island of Culion causing damages to the Colony as follows: In Balala, the sea-wall and dock were destroyed, the cost of repairing them amounting to ₱500. In the Colony proper, 13 houses of light material were blown down, the repair of same costing about ₱200. No other damages were registered.

Miscellaneous repairs.—Miscellaneous repairs were made whenever necessary and when the cost did not exceed one hundred pesos.

GENERAL ADMINISTRATION.

Children's house.—During the year 3 children were returned to the colony as lepers; one died. Up to the present time 71 children have been isolated in this house, 19 having died and 18 having been returned as lepers, 6 returned with contagious diseases, and 28 remaining in the house.

Chaulmoogra clinic.—The chaulmoogra clinic has been in operation as usual throughout the year with an average weekly attendance of 700 lepers.

Advisory board.—Elections for representatives to the advisory board to assume charge for a period of two years beginning January 1, 1920 were held in the Colony on December 1, 1919. A total of 1,771 electors voted, this number including men and women of not less than 18 years and not more than 60 years of age. It is gratifying to state that the elections were held without any disturbances at all.

Fish controversy.—During the latter part of the year a controversy between the fish concerns in the Colony arose, causing no little prejudice to the community of the Colony as the amount of fish delivered to the general leper kitchen was not sufficient to meet the needs of the Colony. This state of affairs, of course, could not be tolerated and required an immediate remedy. Therefore an agreement was made in the latter part of the year between the chief of the Colony, as representative of the Government, and the fish concerns of good standing whereby the latter were to supply 800 kilos of fresh, edible fish daily to the general leper kitchen whenever possible. This agreement was to take effect on January 1, 1920, and subject to the approval of the Director of Health. It is hoped that by this agreement controversies of this nature will be put to an end.

There were 583 deaths in the Colony during the year caused by various diseases, giving a mortality rate of 10 per cent. This is not a high death-rate since the majority of patients arriving at the Colony are already in a weakened condition and advanced stage of leprosy, and in some cases complicated with other diseases.

RECOMMENDATIONS.

1. *Imhoff septic tank*.—This project should be completed as the old tank is now in very bad condition.

2. *General hospital plan*.—The completion of the general hospital plan, that is, the addition of the second floor to the old hospital to connect it with the new one, should be completed, thus increasing the hospital capacity and providing sufficient rooms for offices, laboratory, medical staff and for private patients who may care to pay for special private services.

3. *Tenement houses*.—Two more tenement houses of the sanitary model house type should be constructed to accommodate indigent lepers.

4. *Toilet and laundry buildings*.—The population in the sanitary barrio is rapidly increasing which makes the construction of two toilet and laundry buildings an urgent necessity for the welfare of its population. Another one should also be constructed in the quarantine station to replace the old midden shed.

5. *Secondary dam*.—As recommended in last year's report a secondary dam should be constructed for the exclusive use of the sanitary barrio, quarantine station and the lower portion of the Colony proper, thus avoiding the frequent shortage of water supply met with by the inhabitants of the second and third levels.

6. *Ditches*.—The construction of three more additional ditches in the sanitary barrio is also necessary for its proper sanitary maintenance.

7. *Extension of electric light to the sanitary barrio*.—With the increase of population of the sanitary barrio, the necessity for its illumination becomes apparent. It is estimated that about 35 bulbs of 50 c. p. each will be sufficient to provide this part of the Colony with good and satisfactory illumination.

8. *Bull-cart trail*.—To promote agriculture among the colonists, a new bull-cart trail should be built between the Colony, Baldad and Palumpong. This, it is believed, will relieve the present congestion of the Colony proper. Its construction may be done with leper labor.

9. *New cementery*.—The opening of a new cementery is deemed

urgent as the old one is no longer desirable on account of its proximity to the sanitary barrio and is practically filled up. It is recommended that the new cemetery be established beyond the hill far from the Denney spring. The plans for the site of this cemetery will be submitted as soon as possible.

10. *New jail.*—A new jail to replace the old one, which is insanitary, is urgently needed. Its plan and location should be decided by the sanitary engineer who is recommended to pay the Colony a visit to properly arrange and direct the above mentioned projects.

CONSTRUCTION WORK RECOMMENDED IN BALALA.

11. *Blacksmith and machine shop.*—As recommended in last year's report, a new blacksmith and machine shop should be constructed to replace the present one in Balala, which is actually tumbling down and beyond repairs. This can be done at small expense with a few barrels of cement for footings and a few harrigues, using the present iron roof.

12. *Visitors' quarters.*—A suitable building should be constructed in Balala to accommodate visitors, the employees quarters being unsuitable for such purposes.

13. *New warehouse in Balala.*—The construction of a new warehouse, 10 by 30 meters of reinforced concrete, is urgently necessary. The present one which has seen service for over 12 years now, besides being insanitary and unsuitable, is too small to hold all the supplies and commissaries that are received here. At present the rice has to be stored in the dining rooms, barracks and dwellings, entailing the danger of rice being stolen or damaged by water during the rainy season.

14. *Miscellaneous repairs recommended.*—Repairs of the following are badly needed: (a) Children's home, (b) bake-oven, (c) employees' quarters, (d) barracks, (e) administration building. In the Colony proper, slight repairs should be made on the following: (a) theater, (b) tenement houses, (c) church.

15. *Dental Surgeon instead of Ophthalmologist.*—The Appropriation Act calls for the employment of an ophthalmologist. This year there was sent to the Colony an optometrist (not an oculist), but apparently his services gave the lepers little or no results since they were not relieved from their ailments. The common ailment of the lepers as well as of the non-lepers in Balala is tooth troubles. It is therefore obvious that the services of a dental surgeon will be more beneficial to them, who will thus be saved the making of trips to Manila and the expenses incidental thereto.

16. *Completion of the Bacteriological Laboratory.*—At present the Colony has two microscopes but unfortunately one of them is in bad shape and needs repair. The laboratory should have a complete equipment for the proper accomplishment of its work.

17. *The Colony should raise its own cattle.*—Since the establishment of this Colony, the Government has and is depending upon the purchase of meat from outsiders for the consumption of the lepers and the non-lepers. These contractors, being perhaps conscious that the Government is intirely dependent upon them, take advantage of it and subject the Government to their own whims. To remedy this, it is suggested that the Government buy from the cattlemen in the neighboring islands of Busuanga, say 1,000 head of cattle to begin with, which are comparatively cheap here. A cattle ranch can be established in Ugnisan, Culion island, which is an ideal place and suitable for the purpose.

There should not exist the least fear that the Government is running the risk of losing these cattle from epizootia, rinderpest and the like, for the province of Palawan has the reputation of being immune from such animal diseases. What is important and necessary though, is to properly corral the cattle and employ several herders to look and watch after them. It is believed that in the long run great benefit will be derived from this venture.

18. *Wages of carpenters and laborers should be raised.*—It is common knowledge that the prices of food articles as well as of raiment are high nowadays so that these low-salaried employees can hardly support their families with their meager salaries. The employees, carpenters and laborers here are no exception and the writer deems it justifiable to increase their salaries and wages. It is needless to say that such increase should be granted only to those who render efficient and satisfactory services.

Population by nationality, sex and civil condition, December 31, 1919.

	Male.	Female.		Male.	Female.
Americans	9	0	Single	830	259
Chamorros	12	2	Married	1,369	862
Chinese	8	0	Widowed	129	170
Filipinos	2,994	1,681	Divorced	1	0
			Children	694	392
	3,023	1,683		3,023	1,683
Total	4,706		Total	4,706	

Population January, 1, 1919.....	4,692
Population December 31, 1919.....	4,706

Increase:

Americans	2
Chamorros	1
Filipinos	11

BIRTHS.

Total for the year.....	48
Legitimate	23
Illegitimate	26
Conceived at Colony.....	45
Deaths among these births.....	16

Gratuities in the sum of ₱39,455.11 were paid to the lepers at the Colony during the year.

There was an average of 127 leper laborers employed monthly in the department of public works.

The following is the complete payroll of the Colony for the year:

Non-leper payroll:

General	₱22,671.91
Emergency	8,518.42
Construction	24,501.40

Leper payroll:

General	9,636.36
Public works	8,274.075
Construction	5,377.80
Maintenance	918.70
Chapel	102.80

SUBSISTENCE.

The following shows the total cost of the different messes for the year:

Employees' mess.....	₱15,675.99
Filipino mess.....	4,101.28
Laborers' mess.....	30,127.34
Lepers' mess.....	429,806.93

Average cost per person per day:

Employees' mess.....	1.6387
Filipino mess.....	0.6773
Laborers' mess.....	0.4222
Lepers' mess	0.2558

ALBAY HOSPITAL.

ADMISSION OF PATIENTS.

Patients remaining in hospital from previous year.....	11
Patients admitted during the year.....	1,053
Patients discharged during the year.....	930
Patients died during the year.....	123
Patients remaining in hospital December 31, 1919.....	11
By nationality:	
Filipinos	1,006
Americans	5
Spaniards	22
Chinese	14
Others	6
Total	1,053
By sex:	
Male	621
Female	432
Total	1,053
By ages:	
Below 10 years	616
10 to 20 years	154
20 to 30 years	133
30 to 40 years	70
40 to 50 years	47
50 to 70 years	33
Total	1,053

SUBSISTENCE.

Number of patients subsisted during the year.....	1,064
Number of attendants subsisted during the year.....	575
Number of employees subsisted during the year.....	12
Total	1,651
Total number of days subsisted.....	24,220
Average number of persons subsisted per day.....	67
Total cost of subsistence during the year.....	₱14,532.00
Average cost per person per day.....	0.60
Received from patients during the year.....	4,901.11

EXPENDITURES.

Salaries and wages, including bonus.....	₱7,835.91
Consumption of supplies and materials.....	20,787.17
Miscellaneous	1,888.61
Total	30,511.69

Albay Hospital—Continued.

PERSONNEL AND SALARIES.

1 Chief nurse.....	900.00
1 Nurse	720.00
1 Clerk, cashier and property	480.00
1 Practicante	300.00
2 Student nurses, ₱180 each.....	360.00
1 Cook	240.00
1 Laundryman	180.00
1 Gardener	180.00
2 House servants, ₱150 each	300.00
	<hr/>
	3,660.00
Bonus, 25 per cent.....	915.00
Total	4,575.00

OUTDOOR CLINIC.

Consultations	257
Treatments	990
Operations	28
Attendance at residence	107

There were 57 operations performed, 8 being major and 49 minor. Four patients, 2 leprosy and two smallpox, were treated in the contagious ward. Five obstetrical and one gynecological cases were treated.

Included in the above report are 743 cases which were treated in the smallpox ward, which was established February 8th and continued until July 31st.

LEYTE HOSPITAL.

During the year there were 233 patient admitted and treated in the hospital, which number is 37 less than that of 1918. This decrease of admissions may be explained by the depression of the price of hemp which forms the most important source of wealth in this province, thus all the sick people could not enter the hospital due to lack of means.

The apparent increase of the annual expenses of the hospital, in spite of the decreased number of admissions, is to be attributed to the rise of prices of commodities.

PERSONNEL.

- 1 Resident Physician.
- 1 Dispensary attendant, clerk, cashier and property clerk.
- 1 Chief nurse.
- 1 Nurse.
- 2 Hospital attendants or temporary nurses.
- 1 Practicante.
- 4 Servants.
- 1 Laundress and seamstress.
- 1 Cook.
- 1 Temporary laborer.

The following improvements are recommended, unless same are included in the budget for 1920, as approved by the Provincial Board:

1. Appropriation of ₱2,000 for the repair of the hospital building and of ₱1,000 for equipment.
2. Installation of a septic tank system for sewage disposal.
3. The perforation of a sanitary dug well.

Financial statement.

Months.	Receipts.	Expenditures (not including salaries).	Accounts.	Expenditures.	Appropriations.
January	₱294.01	₱285.50	Compensation of officers and employees	₱5,268.49	₱4,843.36
February	538.01	471.30	Bonuses	219.64	219.64
March	355.02	311.05	Wages	1,233.40	1,139.00
April	247.44	295.71	Bonuses	45.00	45.00
May	276.77	390.33	Consumption of supplies and materials	5,153.99	3,980.00
June	222.47	247.61	Illumination and power service	612.22	600.00
July	170.80	260.51	Building repair service	44.17	100.00
August	410.91	295.22	Traveling expenses	52.28	90.00
September	414.07	321.68	Other services	25.00	20.00
October	247.88	316.56	Equipment repair service		50.00
November	349.89	320.96	Depreciation of expenses	1,915.05	
December	305.85	327.55			
Total ...	3,833.12	3,844.98	Total	14,569.24	11,087.00

REPORT OF THE DIVISION OF SANITATION, CITY OF MANILA.

(Dr. SALVADOR V. DEL ROSARIO, *Chief of Division.*)

EPIDEMIOLOGY.

The epidemiological situation in the city of Manila during the year 1919 may be approximately established by the perusal of the following comparative table of reported cases and rate^a per 10,000 population of the most common communicable and epidemic diseases:

Epidemic diseases in the city of Manila.

Diseases.	1915		1916		1917		1918		1919	
	Cases.	Rate per 10,000 population.	Cases.	Rate per 10,000 population.	Cases.	Rate per 10,000 population.	Cases.	Rate per 10,000 population.	Cases.	Rate per 10,000 population.
Smallpox -----	3	0.11	1	0.04	3	0.11	1,326	47.19	57	1.99
Variceloid -----	3	0.11	62	2.27	129	4.65	-----	-----	23	0.81
Varicella -----	112	4.15	56	2.04	130	4.68	-----	-----	165	5.78
Cholera ¹ -----	66	2.45	1,214	44.38	25	0.90	182	6.47	861	30.12
Typhoid -----	107	3.97	270	9.87	525	18.91	497	17.72	511	17.94
Dysentery -----	-----	-----	199	7.27	851	30.35	839	29.83	737	25.82
Influenza ² -----	-----	-----	-----	-----	-----	-----	37,950	1,347.66	-----	-----
Diphtheria ¹ -----	59	2.18	114	4.16	79	2.84	45	1.65	69	2.42
Measles -----	96	3.56	310	11.33	237	8.55	544	19.36	151	5.28
Plague -----	(3)	-----	-----	-----	-----	-----	-----	-----	-----	-----
Rabies -----	-----	-----	1	0.04	(4)	-----	-----	-----	-----	-----

^a Rate computed on population estimated by arithmetical method according to general census of 1903 and 1918.

¹ Only positive cases. Suspects not included.

² No record of cases kept for years except 1918.

³ No human cases. Only one rat plague case.

⁴ No human cases. All cases were in dogs.

Caution should be exercised in drawing conclusions from the preceding table. The fact that, compulsory notification of communicable diseases in the city of Manila has not been practically enforced until 1916, and that a great percentage of the cases (excepting cases of cholera, plague, smallpox and rabies) is not reported, should always be borne in mind.

Some facts can be established, however, from this table, namely: (1) Case notification system is improving as may be seen from the total number of cases of typhoid fever and dysentery reported. The apparent case increase in the number of cases from 1915 to 1917 is not a real one if we consider the fact that the case fatality of typhoid fever for 1915 and 1916 is respectively 96.26 and 46.29 as against 37.9, 23.74, and 36.98 for the years 1917, 1918, and 1919, respectively. This increase

in the reported cases solely means improvement in notification system. The same happens in the case of dysentery; (2) the case incidence per 10,000 population for typhoid and dysentery remains almost unaltered for the last three years; (3) the occurrence of epidemics of cholera, typhoid fever, and dysentery during the year corresponding to this report; and (4) the disappearance of rabies and plague in the city of Manila.

These are in general the epidemiological conditions in the city of Manila for the year 1919. Individually the diseases will be discussed as follows:

SMALLPOX AND VACCINATION.

Still a few cases and deaths from this dreadful infection during the first six months of the year marked the real end of the epidemic, which beginning in December, 1917, remained during the whole year of 1918, lasting till June of this year.

The epidemic which is the first occurring after 9 years, absence from the City, remained for seventeen months and caused a total of 1,386 cases during the whole epidemic period with 908 deaths. The characteristic features of this epidemic in so far as our investigation and surveys concern, are:

- (a) Probable source of infection: outside of the City—First cases being in persons from outside;
- (b) Duration of the epidemic: about 17 months;
- (c) Case incidence: 47.19 per 10,000 population;
- (d) Case fatality: 65.51 per 100 cases;
- (e) Very few positively vaccinated people contracted the disease;
- (f) The height of the epidemic was reached during the months of April, May and June;
- (g) The epidemic was preceded for two years before by increase in the incidence of varioloid.

From the studies of the recent epidemic and those of the past years, it seems to us safe to say, that the characteristics of smallpox epidemics in the City are almost similar in every particular except in the case incidence and fatality, the former, probably, depending on the degree and extension of immunization attained by the population, while the latter (mortality) is hardly explainable, it having been observed to be increasing from 10 per cent in the former years, 16.13 in 1905–1906, 25 to 50 per cent in 1907–1908 in the whole Philippine Islands, and 65.51 during the present epidemic.

The number of cases and deaths not only of typical smallpox, but of varioloid and varicella registered during the year are given in the following table:

Cases and deaths from smallpox, varioloid and varicella by months in the city of Manila.

Months.	Smallpox.		Varioloid.		Varicella.	
	Cases.	Deaths.	Cases.	Deaths.	Cases.	Deaths.
January	9	3	8		6	
February	12	3	4		54	
March	19	8	6	1	42	
April	12	10	2		23	
May	3	3	1		7	
June	1	1			2	
July	1				1	
August		1			1	
September					8	
October					8	
November			2		8	
December					5	
Total	57	29	23	1	165	

Vaccination, as seen in the table below, has been continued throughout the year with a most gratifying result of over 53 per cent positive for a population which in past years has so extensively and repeatedly been immunized by this method by means of which an epidemic of such an alarming proportion as that of 1918 was done away with within practically five months.

It has also been a factor in bringing about this fortunate result not only of more and more reduced number of non-immune persons, especially children which in the past, either by themselves or by ignorant mothers and families, escaped vaccination for fear of the imaginary evils involved in vaccination, but principally by the splendid work done by the public health nurses of this division who for the first time were appropriately instructed to systematically vaccinate all children just as soon as they reached one month of age.

Vaccinations in the city of Manila.

Health stations.	Vaccinations.	Inspections.	Positive.	Negative.
No. 1, Intramuros	48,275	12,189	7,528	4,661
No. 2, Meisic	94,908	26,818	11,945	14,873
No. 4, Sampaloc	99,132	58,643	39,883	18,760
No. 5, Tondo	62,779	12,838	5,290	7,548
No. 6, Paco	55,618	22,843	6,465	16,378
Total	360,712	133,331	71,111	62,220
Percentage		53.33		

As we see, out of 133,331 inspections made 71,111 were found positive. If the same proportion is true with the total of 360,712 vaccinations performed during the year, we will find that about two-thirds of the population of the City are immune against smallpox by means of vaccination.

CHOLERA, TYPHOID, AND DYSENTERY.

CHOLERA.

Cholera has been present during 1919 to the extent shown by the table below, from which the conclusion may be drawn that the selective period of occurrence of the infection was principally confined to July, August, September, and October of the year.

Cases and deaths of cholera by months, city of Manila.

Months.	Total cases reported.		Positive.	
	Cases.	Deaths.	Cases.	Deaths.
January	22	10	18	9
February	10	3	5	1
March	18	6	14	5
April	14	7	13	7
May	11	2	5	1
June	21	10	16	8
July	318	110	280	108
August	363	148	277	137
September	141	51	130	49
October	94	19	83	18
November	22	8	15	7
December	8	4	5	2
Total	1,042	378	861	352

If it is desired to compare the 1919 cholera outbreak with those of previous years, the attention of the reader is called to the table below, which, in confirmation of the view held in 1918 report, would show that incidental to a greater number of cases in 1919 is the very much reduced fatality for the same year.

Case incidence and fatality of cholera during the last three years.

Cholera.	1917	1918	1919
Cases	25	182	861
Deaths	8	123	352
Fatality (per 100 cases)	32	67.58	40.88
Incidence (per 1,000 population) .....	.090	.647	3.014
Mortality (per 1,000 population) .....	.029	.436	1.23

To show some other epidemiological features of the cholera epidemics in the City of Manila, and as confirmation of the provisional conclusions advanced in our report of 1917, the following tables (statistical and compiled laboratory reports) are enclosed in this report, as follows:

Report of cholera during the year 1919, covering the following date.

Health districts.	Cases reported.		Positive clinically and bacteriologically.		Positive clinically only.		Found positive.	
	Cases.	Deaths.	Cases.	Deaths.	Cases.	Deaths.	Cases.	Deaths.
No. 1, Intramuros	128	32	92	28	4	3	96	31
No. 2, Meisic	211	70	153	49	18	13	171	62
No. 4, Sampaloc	204	74	149	59	15	10	164	69
No. 5, Tondo	335	139	241	107	36	23	277	130
No. 6, Paco	164	63	146	55	7	5	153	60
Total	1,042	378	781	298	80	54	861	352

Report of cholera carriers during the year 1919, by districts.

Health districts.	Carrier.		Total.
	Living.	Dead.	
District No. 1, Intramuros	57	5	62
District No. 2, Meisic	45	4	49
District No. 4, Sampaloc	15	8	23
District No. 5, Tondo	91	10	101
District No. 6, Paco	14	7	21
Hawaiian Sugar Planters' Association	6	0	6
Bilibid Prison	88	0	88
Total	316	34	350

Report of cholera carriers during the year 1919, by months.

Months.	Carrier.		Total.
	Living.	Dead.	
January	3	2	5
February	3	0	3
March	12	0	12
April	4	0	4
May	2	0	2
June	3	0	3
July	112	8	120
August	109	14	123
September	29	2	31
October	28	4	32
November	9	4	13
December	2	0	2
Total	316	34	350

Report of stool specimens taken from cholera contacts, intestinal infection survey and dead bodies and the number of carriers found in each, reported by health districts during 1919.

Health districts.	Contacts.		Intestinal infection survey.		Dead bodies.		Total.	
	Num-ber.	Posi-tive.	Num-ber.	Posi-tive.	Num-ber.	Posi-tive.	Num-ber.	Posi-tive.
District No. 1, Intramuros	4,713	54	1,313	3	155	5	6,181	62
District No. 2, Meisic	3,647	45	0	0	1,313	4	4,960	49
District No. 4, Sampaloc	1,157	15	0	0	92	8	1,249	23
District No. 5, Tondo	3,557	91	0	0	1,886	10	5,443	101
District No. 6, Paco	1,239	14	583	0	761	7	2,583	21
Bilibid Prison	60,946	88	0	0	0	0	60,946	88
Hawaiian Sugar Planters' Association	9,246	6	0	0	0	0	9,246	6
Total	84,505	313	1,896	3	4,207	34	90,608	350

Cultures taken from loop of intestines of dead bodies in San Lazaro Hospital and examined for cholera during 1919.

Health districts.	Loop of intestine.		
	Sample.	Positive.	Negative.
No. 1, Intramuros	14	14	0
No. 2, Meisic	28	28	0
No. 4, Sampaloc	31	30	1
No. 5, Tondo	66	62	4
No. 6, Paco	35	33	2
Total	174	167	7

Cholera vibrio carriers found during the year 1919.

Case No.	Examination.				First examination positive.	Second examination positive.
	First.	Second.	Third.	Fourth.		
1	Aggl.	Aggl.			Mar. 3, 1919	April 9, 1919.
2	Non-aggl.	Non-aggl.	Non-aggl.		Mar. 24, 1919	April 2, 1919.
3	Aggl.	Aggl.			July 26, 1919	July 29, 1919.
4	Aggl.	Aggl.			Jan. 4, 1919	Jan. 5, 1919.
5	Aggl.	Aggl.			July 28, 1919	July 30, 1919.
6	Non-aggl.	Aggl.			July 22, 1919	July 29, 1919.
7	Non-aggl.	Aggl.			July 19, 1919	July 30, 1919.
8	Aggl.	Aggl.			July 30, 1919	July 31, 1919.
9	Aggl.	Aggl.			July 30, 1919	July 31, 1919.
10	Non-aggl.	Aggl.			Oct. 10, 1919	Oct. 17, 1919.
11	Aggl.	Aggl.			Jan. 5, 1919	Jan. 6, 1919.
12	Aggl.	Aggl.	Aggl.	Aggl.	Mar. 26, 1919	April 2, 1919.
13	Aggl.	Aggl.		Aggl.	Mar. 30, 1919	April 2, 1919.
14	Aggl.	Aggl.	Aggl.	Aggl.	Mar. 31, 1919	April 4, 1919.
15	Aggl.	Aggl.	Aggl.	Aggl.	June 23, 1919	July 4, 1919.
16	Aggl.	Aggl.	Aggl.	Aggl.	June 24, 1919	July 5, 1919.
17	Aggl.	Aggl.			July 11, 1919	July 19, 1919.
18	Aggl.	Aggl.			July 18, 1919	July 27, 1919.
19	Aggl.	Aggl.			July 21, 1919	July 27, 1919.
20	Aggl.	Aggl.			July 22, 1919	July 23, 1919.
21	Aggl.	Aggl.	Aggl.		July 26, 1919	July 29, 1919.
22	Aggl.	Aggl.			July 26, 1919	July 30, 1919.
23	Aggl.	Aggl.			July 26, 1919	July 30, 1919.

Cholera vibrio carriers found during the year 1919.

HEALTH DISTRICT NO. 1, INTRAMUROS.

No.	Admitted to—	Diagnosis.	Date positive for agglutinable vibrio.	Date positive for non-agglutinable vibrio.
1	San Lazaro Hospital	Typhoid fever	{ March 3, 1919 April 9, 1919	
2	do	Non-agglutinable vibrio carrier		{ March 24, 1919. March 29, 1919.
3	do	Cholera vibrio carrier	{ July 26, 1919 July 29, 1919	{ April 2, 1919.

HEALTH DISTRICT NO. 2, MEISIC.

4	San Lazaro Hospital	Cholera vibrio carrier	{ January 4, 1919 January 5, 1919	
5	do	do	{ July 28, 1919 July 30, 1919	
6	do	do	{ July 29, 1919 July 30, 1919	{ July 22, 1919.
7	do	do	{ July 30, 1919 July 31, 1919	{ July 19, 1919.
8	do	do	{ July 30, 1919 July 31, 1919	
9	do	do	{ July 30, 1919 July 31, 1919	

HEALTH DISTRICT NO. 4, SAMPALOC.

10	San Lazaro Hospital..	Cholera vibrio carrier.....	October 10, 1919.	October 17, 1919.
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HEALTH DISTRICT NO. 5, TONDO.

11	San Lazaro Hospital..	Dysentery	{ Jan. 5, 1919.. Jan. 6, 1919.. March 26, 1919.. March 29, 1919.. March 31, 1919.. April 2, 1919.. March 30, 1919.. April 2, 1919.. March 31, 1919.. April 2, 1919.. April 3, 1919.. April 4, 1919.. June 23, 1919.. June 29, 1919.. June 30, 1919.. July 4, 1919.. June 24, 1919.. June 30, 1919.. July 4, 1919.. July 5, 1919.. July 18, 1919.. July 27, 1919.. July 21, 1919.. July 27, 1919.. July 22, 1919.. July 23, 1918.. July 26, 1919.. July 27, 1919.. July 29, 1919.. July 26, 1919.. July 30, 1919.. July 26, 1919.. July 30, 1919..
12	do	do	
13	do	Cholera vibrio carrier.....	
14	do	Typoid fever.....	
15	do	Cholera vibrio carrier.....	
16	do	do	
17	do	do	
18	do	do	
19	do	do	
20	do	do	
21	do	do	
22	do	do	

*Result of laboratory examinations of cholera cases by the Bureau of Science
during 1919.*

Case No.	Examination.				Date of first positive examination.	Date of last positive examination.
	First.	Second.	Third.	Fourth.		
1	Non-aggl				Jan. 16, 1919	Jan. 16, 1919.
2	Non-aggl	Non-aggl			Jan. 16, 1919	Jan. 17, 1919.
3	Non-aggl				July 22, 1919	July 22, 1919.
4	Non-aggl				July 22, 1919	July 22, 1919.
5	Non-aggl				July 22, 1919	July 22, 1919.
6	Non-aggl				July 22, 1919	July 22, 1919.
7	Non-aggl	Aggl			July 22, 1919	July 24, 1919.
8	Non-aggl				July 23, 1919	July 23, 1919.
9	Non-aggl				July 24, 1919	July 24, 1919.
10	Non-aggl				July 25, 1919	July 25, 1919.
11	Non-aggl				Oct. 17, 1919	Oct. 17, 1919.
12	Non-aggl				Mar. 17, 1919	Mar. 17, 1919.
13	Non-aggl				July 22, 1919	July 22, 1919.
14	Non-aggl				July 22, 1919	July 22, 1919.
5	Non-aggl				July 23, 1919	July 23, 1919.
16	Non-aggl				July 23, 1919	July 23, 1919.
17	Non-aggl				July 23, 1919	July 23, 1919.
18	Non-aggl	Aggl			July 23, 1919	July 23, 1919.
19	Non-aggl	Non-aggl			July 23, 1919	July 24, 1919.
20	Non-aggl				Oct. 17, 1919	Oct. 17, 1919.
21	Non-aggl				July 22, 1919	July 22, 1919.
22	Non-aggl				July 22, 1919	July 22, 1919.
23	Non-aggl				July 22, 1919	July 22, 1919.
24	Non-aggl	Non-aggl	Aggl	Aggl	July 22, 1919	July 26, 1919.
25	Non-aggl	Aggl			July 22, 1919	July 25, 1919.
26	Aggl	Aggl			July 26, 1919	July 30, 1919.
27	Non-aggl				July 22, 1919	July 22, 1919.
28	Non-aggl				July 22, 1919	July 22, 1916.
29	Non-aggl	Aggl			July 22, 1919	July 24, 1919.
30	Non-aggl	Aggl			July 23, 1919	July 25, 1919.
31	Non-aggl	Aggl	Aggl		July 23, 1919	July 27, 1919.
32	Non-aggl	Aggl			July 24, 1919	Aug. 29, 1919.
33	Non-aggl				Oct. 16, 1919	Oct. 16, 1919.
34	Non-aggl				Oct. 17, 1919	Oct. 17, 1919.
35	Non-aggl				Oct. 17, 1919	Oct. 17, 1919.

Results of laboratory examination of cholera cases by the Bureau of Science during 1919.

HEALTH DISTRICT NO. 2, MEISIC.

No.	Admitted to—	Diagnosis.	Date positive for agglutinable vibrio.	Date positive for non-agglutinable vibrio.
1	San Lazaro Hospital	Cholera		Jan. 16, 1919.
2	do	Cholera suspect		(Jan. 16, 1919.
3	do	Cholera suspect		Jan. 17, 1919.
4	do	Cholera		July 22, 1919.
5	do	do		July 22, 1919.
6	do	do		July 22, 1919.
7	do	do	July 24, 1919.	July 22, 1919.
8	do	Cholera suspect		July 23, 1919.
9	do	do		July 24, 1919.
10	do	do		July 25, 1919.
11	do	Cholera		Oct. 17, 1919.

HEALTH DISTRICT NO. 4, SAMPALOC.

12	San Lazaro Hospital	Cholera suspect		Mar. 17, 1919.
13	do	do		July 22, 1919.
14	do	do		July 22, 1919.
15	do	do		July 23, 1919.
16	do	Cholera		July 23, 1919.
17	do	Cholera suspect		July 23, 1919.
18	do	do	July 24, 1919.	July 23, 1919.
19	do	Observation for cholera.		July 23, 1919.
20	do	Cholera		July 24, 1919.
				Oct. 17, 1919.

HEALTH DISTRICT NO. 5, TONDO.

21	San Lazaro Hospital	Cholera suspect		July 22, 1919.
22	do	Cholera		July 22, 1919.
23	do	do		July 22, 1919.
24	do	Cholera suspect	July 24, 1919.	July 22, 1919.
			July 26, 1919.	July 23, 1919.
25	do	do	July 25, 1919.	July 22, 1919.
26	do	do	July 26, 1919.	
			July 30, 1919.	

HEALTH DISTRICT NO. 6, PACO.

27	San Lazaro Hospital	Cholera suspect		July 22, 1919.
28	do	do		July 22, 1919.
29	do	do	July 24, 1919.	July 22, 1919.
30	do	Cholera	July 25, 1919.	July 23, 1919.
31	do	Cholera suspect	July 25, 1919.	July 23, 1919.
32	do	do	July 27, 1919.	
33	do	Observation for cholera	Aug. 29, 1919.	Aug. 24, 1919.
34	do	Cholera suspect		Oct. 16, 1919.
				Oct. 17, 1919.

QUARANTINE SERVICE.

35	San Lazaro Hospital	Cholera suspect		Oct. 17, 1920.
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Specimens taken from cholera cases and carriers released from San Lazaro Hospital, by districts during the year 1919.

Health districts.	First week.		Second week.		Third week.		Fourth week.		Fifth week.		Sixth week.		Seventh week.		Eighth week.	
	Specimens.	Positive.	Specimens.	Positive.	Specimens.	Positive.	Specimens.	Positive.	Specimens.	Positive.	Specimens.	Positive.	Specimens.	Positive.	Specimens.	Positive.
No. 1, Intramuros.....	61	0	56	0	27	1	43	1	20	0	38	0	26	0	48	0
No. 2, Mescic.....	8	0	4	0	2	0	6	0	4	0	4	0	8	0	6	0
No. 4, Sampaio.....	31	0	28	0	21	0	9	0	8	0	5	0	0	0	4	0
No. 5, Iondo.....	65	0	42	0	22	0	18	0	4	0	3	0	0	0	0	0
No. 6, Paco.....	16	0	14	0	10	0	8	0	7	0	4	0	2	0	0	0
Total.....	181	0	144	0	82	1	84	1	43	0	54	0	43	0	58	0

TYPHOID.

Typhoid epidemiological figures offer so slight variations from those corresponding to 1917 and 1918, that any discussion at length on the subject would hardly prove of much importance.

Typhoid.	1917	1918	1919
Cases	525.	497	511
Deaths	199	118	189
Fatality (per 100 cases)	37.9	23.74	36.98
Incidence (per 1,000 population)	1.891	1.772	1.792
Mortality (per 1,000 population)	.717	.419	.662

Dysentery.	1917	1918	1919
Cases	851	839	737
Deaths	294	218	414
Fatality (per 100 cases)	34.54	25.98	56.03
Incidence (per 1,000 population)	3.035	2.983	7.582
Mortality (per 1,000 population)	1.059	.774	1.449

This table would show a slight reduction in the incidence per 1,000 population, in very striking contrast with well marked increase in fatality per 100 cases and also a marked increase in the mortality per 1,000, all of which facts offer room for the suspicion that the prevailing type has been "bacillary dysentery."

MORTALITY IN THE CITY OF MANILA.

Well in spite of the above facts, and due principally to the withdrawal of influenza as a well known cause for the high mortality of 1918, the general mortality in the city showed a considerable reduction during 1919 to the extent of comparing favorably with typical non-cholera years (1911-1912), although not yet keeping pace with the lowered mortality observed since 1915 up to 1918 regardless of the existence or absence of cholera epidemics.

The following table will greatly facilitate this comparison:

Revised comparative mortality by year, from 1908 to 1919 inclusive.

Year.	Number of deaths.	Population. ¹	Crude death rate.
1908	10,646	241,379	44.10
1909	7,936	245,401	32.34
1910	8,029	249,423	32.19
1911	8,227	253,445	32.46
1912	7,819	257,467	30.37
1913	5,904	261,489	22.50
1914	6,587	265,511	24.81
1915	6,820	259,533	26.27
1916	7,165	273,555	26.19
1917	6,682	277,577	24.07
1918	12,369	281,599	47.47
1919	7,814	285,621	27.36

¹ Population computed on 1903 and 1918 Census (arithmetical method).

As regards infant mortality it may be said that it is through the high efficiency, efforts and conscientiousness shown by the public health nurses, from the time of the reorganization of that department of the service in 1919, in the performance of their new duties that such a fortunate success as the steady reduction of infant mortality has been brought about.

The table below speaks for itself.

Infant mortality in the city of Manila.¹

[Per 1,000 births.] •

1915	396.72
1916	336.82
1917	275.47
1918	397.56
1919	224.95

¹ Computed on births and deaths under one year including transients.

With the exception of 1916, this steady decrease in the infant mortality was made possible only since the reorganization of the service (1915) as completed further by improvements in the activities of the Public Health Nursing which is now carrying out its work in a most thorough and promising manner. This gratifying result of the work of the nurses' department can better be shown by the decrease in the number of deaths from the most important causes among infants as seen in the following table:

Decrease in mortality from different causes of death among infants.

	1917	1918	1919
Infantile beriberi	384	597	354
Congenital debility	482	642	509
Acute bronchitis	391	645	309
Infantile convulsions	213	215	156
Umbilical tetanus	103	61	43
Infant mortality	255.3	406.5	234.2

On the other hand, we may say that the decrease in general mortality was partly due to this marked reduction in infant mortality.

NATALITY AND BIRTH RATE IN THE CITY OF MANILA.

Inversely with what is the case with the mortality, the number of births is steadily increasing. The following table shows the total births and birth rate during the last five years for the sake of comparison. In the same table, the effective birth rate per 1,000 population is included, which not only expresses in a relative way the natural increase of the city population, but is also comparative taken in relation to infant mortality, in other words, it measures the birth rate taking in consideration the deaths of infants under one year of age.

Table of natality and birth rate in the city of Manila.

Year.	No. of births.	Birth rate.	Effective birth rate.
1915	8,850	32.83	a 19.81
1916	9,082	33.20	a 22.02
1917	8,883	32.00	a 23.18
1918	9,083	32.26	a 19.43
1919	10,029	35.11	a 27.21

* Per 1,000 population.

PUBLIC HEALTH NURSING.

This service is one of the new activities introduced in the Division of Sanitation, city of Manila, and inaugurated on May 1st. Although this service has been started some years ago, we may say that it is a new activity, if we take into account the reorganization made, the increase in the number of personnel, and the broad scope of activities given which was remodeled and adjusted on the basis of modern requirements and achievements of public health nursing.

The reorganization and the present work of this service have been devised especially with the object of giving special attention to the reduction of infant mortality, this being the most important factor in the general death rate. The results attained have been so gratifying that the division is in the hope of reducing the mortality of Manila within a short period of time. It is regretted to state, however, that due to shortage of personnel and appropriation the work could not be extended further, it being only confined to newly born babies in their prenatal condition and shortly after they are delivered. Another branch of this Service which is closely related to public health nursing is that of school inspection and medical examination of school-children. The period from shortly after birth to that of school age is practically overlooked, which constitutes a gap in the infant welfare activities and which can hardly be taken care of by this branch due to both inadequate personnel and funds.

The kind of service rendered by this branch is of a medical-social character as may be seen from the outline below—

MEDICAL-SOCIAL.

Prenatal:

- Advice to pregnant women in regard to hygiene of pregnancy.
- Treatment of pregnant woman.

Natal:

- Deliveries attended:
 - Care of mothers.
 - Care of newly born babies.

Medical-social—Continued.

Post-natal:

Care of mother, hygiene of maternity, etc.

Care of infants, diet, bath, clothing, etc.

Treatment of both mothers and infants in case of illness.

Preventive hygiene:

Vaccination.

Vital statistics:

Registration, etc.

As an explanation of the scheme of work outlined above, the following extract from the report of the chief of the Nursing Department is quoted:

EXTENT OF AID RENDERED.

The help given by the department is not confined merely to giving lectures on dietetics and hygiene, but it also embraces the giving of minor medical treatments, the registration of newly born babies as an aid in the protection of their lives and rights, and the vaccination of infants after their first month of life. It further includes practical demonstrations in the preparation of milk, formulas and their proper administration in all cases of artificial feeding of infants at different ages. The aim is to teach mothers and prospective mothers by precept as well as by the force of example.

Every effort is made to attract the sympathy of mothers toward our nurses. For this purpose each nurse in the department is given explicit instructions as to the right kind of service they are expected to give to mothers and expectant mothers and the proper attitude she must take in her dealings with them. As the aim of this department is to aid the greatest number consistent with the resources at command, each nurse is instructed to use all possible means to search for babies under one year old or mothers or expectant mothers who might be in need of help. This result is often accomplished by inquiry of the persons visited daily. It is gratifying to note our relative success in overcoming popular prejudices against modern methods in the care and treatment of pregnancies, deliveries, mothers, babies and children as is demonstrated by the over increasing anxiety with which the visits of a district nurse are now looked forward to by many homes.

The following statistical tables of the work performed by the nurses are submitted. All of them are self-explanatory so that no further comment is deemed necessary:

Statistics of the department of public health nursing for the year ending December 31, 1919.

HEALTH STATION NO. 1, INTRAMUROS.

Months.	Calls.	Treatments.		Vaccination.	Births registered.
		Clinic.	Homes.		
May.....	138		95	21	
June.....	187		22	30	
July.....	767		79	131	
August.....	5 18		157	59	
September.....	894	86	39	179	39
October.....	414	29	22	52	5
November.....	876	83	30	106	24
December.....	961	91	37	136	27
Total.....	4, 725	289	491	714	95

HEALTH STATION NO. 2, MEISIC.

May	383		85	171	
June	292		37	106	
July	514		158	195	
August	287		233	33	6
September	722	368	184	334	33
October	775	188	138	328	32
November	783	175	124	362	56
December	584	105	96	214	32
Total	4,340	806	1,055	1,743	159

HEALTH STATION NO. 4, SAMPALOC.

May	249		29	72	
June	254		35	53	
July	430		150	141	
August	283		88	0	8
September	386	70	121	75	18
October	754	170	32	129	35
November	685	16	19	104	52
December	739	1	24	136	57
Total	3,780	257	498	720	170

HEALTH STATION NO. 5, TONDO.

May	290		51	266	
June	291		62	70	
July	491		118	119	
August	169		52	46	
September	724	193	70	265	90
October	812	54	64	177	101
November	649	19	78	91	86
December	1,004	60	12	89	113
Total	4,430	326	507	1,123	890

HEALTH STATION NO. 6, PACO.

May	212		74	85	
June	137		38	25	
July	204		53	21	
August	331		96	42	
September	975	119	202	184	113
October	1,080	61	131	192	96
November	746	89	189	101	109
December	769	140	75	108	97
Total	4,454	409	858	758	415

STOTSENBURG.

Months.	Calls.	Treatments.
May	90	40
June	144	32
Total	234	72

SUMMARY BY DISTRICTS.

District.	Calle.	Treatments.		Vaccination.	Births Registered.
		Clinic.	Home.		
No. 1, Intramuros	4,525	289	491	714	95
No. 2, Meisic	4,340	806	1,055	1,743	159
No. 4, Sampaloc	3,780	257	498	720	170
No. 5, Tondo	4,430	326	507	1,123	390
No. 6, Paco	4,454	409	858	758	415
Stotsenburg	434		72		
Total	21,963	2,087	3,481	5,058	1,229

SUMMARY BY MONTHS.

May	1,362		374	615	
June	1,275		236	294	
July	2,406		558	607	
August	1,588		626	180	14
September	3,701	836	616	1,037	293
October	3,835	472	387	878	269
November	3,739	382	440	764	327
December	4,057	397	244	683	326
Total	21,963	2,087	3,481	5,058	1,229

MISCELLANEOUS.

Below are given some tables representing the bulk and character of some of the activities of the Division of Sanitation, City of Manila:

Statistical report of rabies in dogs and in persons during the year 1919.

Health district.	Number of suspected dogs examined.		Number of persons bitten by dogs.	
	Examined.	Found positive.	Persons bitten.	Contracted the disease.
No. 1, Intramuros	25	2	21	0
No. 2, Meisic	33	a 8	29	0
No. 4, Sampaloc	24	0	25	0
No. 5, Tondo	28	a 2	29	0
No. 6, Paco	12	1	12	0
Total	122	13	116	0

a 1 suspicious.

Samples of drinking water examined during the year 1919.

Health district.	Samples examined.	Bacterial count.			Positive for-				Samples unfit for drinking.	Percentage unfit for drinking.
		16,600 and over.	100,000 and over.	1,000,000 and over.	Presumptive test.	Bacillus coli.	Amoeba.	Flagellates.		
No. 1, Intramuros	291	234	57	0	121	66	25	53	14	66
No. 2, Meisic	289	140	149	0	122	46	57	72	75	46
No. 4, Sampaloc	495	278	216	1	253	102	45	111	23	103
No. 5, Tondo	912	650	262	0	398	190	96	248	79	190
No. 6, Paco	902	672	229	1	442	236	49	340	182	170
Total	2,889	1,974	913	2	1,336	640	272	824	373	375

FINES IMPOSED.

Health District No. 1, Intramuros.....	₱310.00
Health District No. 2, Meisic.....	70.00
Health District No. 4, Sampaloc.....	194.00
Health District No. 5, Tondo.....	84.00
Health District No. 6, Paco.....	108.30

Total 766.30

Garbage can orders, station orders (miscellaneous), and recommendations for sewer connection.

Health district.	Garbage orders.	Station orders (miscellaneous.)	Recommendation for sewer connection.
No. 1, Intramuros	33	251	0
No. 2, Meisic	687	1,050	24
No. 4, Sampaloc	233	305	1
No. 5, Tondo	15	75	0
No. 6, Paco	11	214	0
Total	979	1,895	25

Minor orders issued by assistant sanitary inspectors during the year 1919.

	Districts.					
	No. 1.	No. 2.	No. 4.	No. 5.	No. 6.	Total.
First minor orders issued	477	5,153	755	951		7,336
First minor orders complied with	443	5,153	755	989		7,290
Second minor orders issued	34			12		46
Second minor orders complied with	34			12		46
Prosecution	1					1
Fines imposed	1					1
Total amount of fines	₱10.00					₱10.00
Cases in which imprisonment was imposed						
Cases dismissed or defendant acquitted						

Clean-up week during the month of December, 1919.

Health district.	Places found insanitary.				Insanitary condition corrected.				No. of employees.	No. of days spent.
	A.	B.	C.	D.	A.	B.	C.	D.		
No. 1, Intramuros	950	539	765	2,932	640	405	459	2,258	11	15
No. 2, Meisic	2,561	1,336	1,547	4,211	2,332	991	1,219	2,347	11	15
No. 4, Sampaloc	1,983	341	408	435	349	299	315	484	10	14
No. 5, Tondo	7,816	919	529	4,467	5,910	9,694	504	4,433	13	13
No. 6, Paco	170	20	34	840	86	20	31	837	4	20
Total	13,480	3,155	3,283	12,885	9,317	11,409	2,528	10,359	49	77

A. Improper handling of drinking water.

B. Mosquito breeding places.

C. Domestic animals.

D. General cleaning.

Stool specimens taken from contacts of dysentery cases.

Health district.	Number of samples.	Positive.	Negative.
No. 1, Intramuros	426	1	425
No. 2, Meisic	223	5	218
No. 4, Sampaloc	292	4	288
No. 5, Tondo	447	3	444
No. 6, Paco	3	0	3
Total	1,391	13	1,378

Stool and blood specimens taken from contacts of typhoid cases.

Health district.	Widal test for contacts.			Stool examination of contacts positive for widal test.		
	Number of samples.	Positive.	Negative.	Number of samples.	Positive.	Negative.
No. 1, Intramuros	897	19	878	3	0	3
No. 2, Meisic	64	12	52	11	0	11
No. 4, Sampaloc	293	23	270	103	1	102
No. 5, Tondo	46	0	46	0	0	0
No. 6, Paco	69	1	68	6	0	6
Total	1,369	55	1,314	123	1	122
Per cent positive .....		.04			.008	

Report of action on application for licenses.

Kind of licenses applied for.	Ap- proved.	Disap- proved.	Total acted upon.
Liquor:			
First-class bars	63	5	68
Second-class bars	9		9
First-class bars and restaurants	32		32
Second-class bars and restaurants	15		15
Groceries	84		84
Wholesale houses	24		24
Druggists	11		11
Theaters	2		2
Hotels	38	1	39
Restaurants	518	40	558
Lodging houses	18		18
Boarding houses	42	17	59
Native wines	2,628	83	2,711
Cooked foods, fruits, vegetables, soft drinks, and bakery products	2,634	125	2,759
Second-hand articles	116		116
Barber shops	493	11	504
Barber shops (additional chairs)	9	2	11
Laundries	95	7	102
Public vehicles	423	55	478
Additional vehicles	4		4
Billiard and pool tables	57	1	58
Dyeing and cleaning establishments	74	11	85
Livery stables	44	9	53
Manufactories	395	27	422
Grocery stores	277	7	284
Garages	50	7	57
Garages (additional auto)	4		4
Bicycles for hire	22	2	24
Clubs	47	3	50
Theaters and cinematographs	40		40
Ice cream and iced mongo	117	5	122
Blacksmith shops	94	8	102
Drying establishments	20	10	30
Massagists	14	2	16
Permit to sell fruits, vegetables, etc.	180	7	187
Bakeries	45	1	46
Boarding stables	5	2	7
Distilleries	17		17
Pawnbrokers	50		50
Permit to sell native vermicelli	1		1
Permit to conduct a small show	1		1
Forges	17		17
Hot coffee	1		1
Dairies	1		1
Horse shoeing	22	1	23
Permit to store combustible materials	15		15
Auto repair shops	1		1
Contractor for electrical installations	1		1
Junk shops	33	2	35
Permit to sell white taju	2		2
Permit to conduct an auto down circus	1		1
Auctioners	2		2
Undertakers	6		6
Embalmers	8		8
To operate stool machines	4		4
Merry-go-round	3		3
Band (musicians)	1		1
Race track	1		1
Foundries	17		17
Tattooers	5		5
Master plumber	1		1
Drying and selling fish	28	2	30
Tannery and sale of leather	12		12
Electrical installations	2		2
Bowling alleys	2		2
White taju	6	1	7
Storage of sugar	16		16
To can and preserve fruits	1		1
Breweries	3		3
Stock yards	3		3
Total	9,027	454	9,481

Report of disinfections.

Causes for disinfection.	Disinfections.	Contacts.
Cholera.....	527	7,478
Cholera, cholera suspect and cholera contact	978	0
And measles	1	0
Contacts	19	60
General disinfection for cholera	77,822	0
General disinfection for cholera and vibrio carriers.....	4,184	0
Observation for cholera	46	0
Suspected	1,226	18,016
Vibrio carriers	170	639
Vibrio and dysentery carriers	2	0
Diarrhea, observation for cholera	10	0
Diphtheria	56	92
Carriers	46	0
Carriers and typhoid fever	2	0
General disinfection for diphtheria	107	0
Suspected	4	21
Dysentery	476	750
Amoebiasis	1	0
Contacts	3	0
General disinfection for dysentery	3,318	0
Exhumations	366	0
Gastro enteritis and diarrhea	3	0
Grippe	3	0
Influenza and pneumonia post influenza	4	0
Leprosy	52	23
Contacts	2	0
Suspected	4	0
Measles	13	10
Mumps	1	0
Paratyphoid	4	0
Pertussis	1	5
Pneumonia	1	0
Pulmonary tuberculosis	69	0
Smallpox	69	140
Contacts	4	7
Tetanus	12	6
Tuberculosis	85	94
Contacts	4	0
Typhoid fever	406	2,530
Cholera vibrio carriers	1	0
Contacts	2	4
General disinfection for typhoid fever	4,407	0
Varicella	90	128
Varioloid	26	100
Contacts	1	0
Insanitary conditions	717	3
Total	95,345	30,105

MEDICAL INSPECTION OF SCHOOLS.

Under this heading the inspection and examination of school children are discussed. In fact, the service should be combined with that of public nursing and discussed as constituting one single department, which might be called the "Child Welfare Department," but, due to the present organization of the Service, which is deficient on account of lack of appropriation, it would seem appropriate to deal with them separately.

The work of medical inspection of schools has, gradually, under the supervision of the health officers, developed, from the beginning up to the present time, into three distinct phases, as a result of the achievements of sanitary science. In the City of Manila where this work was started, it has already reached its full development, and these three phases of the work have been carried out as fully as possible within the limitations of the present possibilities of the Service. These three phases or what may be called the three activities of this branch of the Service are: 1. The detection of epidemic diseases. This is the first phase of the work, it being only a branch of the health stations and as a help for the work of health officers in the campaign against epidemic diseases. 2. The examination of school children to detect epidemic diseases. The second phase has been extended to all physical defects, including their correction and treatment, and 3. The phase of preventive hygiene or rather "Health Developmental Supervision" as it is called, which is the work exerted upon the health and development of children, molding and casting them according to the requirements of modern knowledge. What should be added to these activities which is not practiced in the city, is the inspection of school buildings and furniture (chairs, desks, etc.), to see that they conform to the needs of the class and, if possible, to fit the latter to the requirements of the individual pupils. A shortsighted child is often given a chair farther away from the blackboard than that of a normal one, or a high desk is given to a small child or vice versa, etc.

The work carried out in this city for the year corresponding to this report has been similar to that of the preceding one, comprehending the phases or activities mentioned above. 1. Detection, treatment and exclusion from school of children found with dangerous communicable diseases. 2. Physical examination of all children—eyes, ears, nose, throat, mouth, chest, abdomen, etc.—for which they are either referred to specialists or treated by the health officers at health stations or clinics, and 3. Health

supervision of school children, consisting in lectures, cure and instruction of personal hygiene, correction of minor defects, and inspection of children's houses.

Tables of the work rendered by this branch of the Service for the year 1919 are given below:

TABLE A.—*Clinical work.*

Month.	Clinics.	Number of operations.	Number of treatments.	Number of cured.
January	Intramuros, Station No. 1	0	1,253	0
Do	Meisic, Station No. 2	0	1,391	21
Do	Sampaloc, Station No. 4	0	721	11
Do	Tondo, Station No. 5	1	1,100	16
Do	Paco, Station No. 6	0	0	0
February	Intramuros, Station No. 1	0	1,951	0
Do	Meisic, Station No. 2	0	1,891	29
Do	Sampaloc, Station No. 4	0	490	0
Do	Tondo, Station No. 5	0	1,020	20
Do	Paco, Station No. 6	0	0	0
March	Intramuros, Station No. 1	0	2,734	0
Do	Meisic, Station No. 2	0	2,171	38
Do	Sampaloc, Station No. 4	0	1,002	11
Do	Tondo, Station No. 5	0	750	15
Do	Paco, Station No. 6	0	0	0
April	Intramuros, Station No. 1	0	1,009	0
Do	Meisic, Station No. 2	0	1,901	13
Do	Sampaloc, Station No. 4	0	298	21
Do	Tondo, Station No. 5	0	470	4
Do	Paco, Station No. 6	0	0	0
May	Intramuros, Station No. 1	0	964	0
Do	Meisic, Station No. 2	0	768	10
Do	Sampaloc, Station No. 4	0	95	0
Do	Tondo, Station No. 5	0	896	15
Do	Paco, Station No. 6	0	0	0
June	Intramuros, Station No. 1	0	2,216	0
Do	Meisic, Station No. 2	0	2,793	33
Do	Sampaloc, Station No. 4	0	1,036	15
Do	Tondo, Station No. 5	0	1,631	25
Do	Paco, Station No. 6	0	546	0
July	Intramuros, Station No. 1	0	1,611	0
Do	Meisic, Station No. 2	0	3,179	174
Do	Sampaloc, Station No. 4	0	1,369	36
Do	Tondo, Station No. 5	0	1,319	34
Do	Paco, Station No. 6	0	498	0
August	Intramuros, Station No. 1	0	1,067	0
Do	Meisic, Station No. 2	55	2,957	47
Do	Sampaloc, Station No. 4	0	1,080	14
Do	Tondo, Station No. 5	3	2,307	23
Do	Paco, Station No. 6	0	329	0
September	Intramuros, Station No. 1	0	1,155	0
Do	Meisic, Station No. 2	51	3,510	96
Do	Sampaloc, Station No. 4	0	990	14
Do	Tondo, Station No. 5	27	1,735	53
Do	Paco, Station No. 6	0	1,026	0
October	Intramuros, Station No. 1	0	1,278	0
Do	Meisic, Station No. 2	53	4,041	86
Do	Sampaloc, Station No. 4	0	1,027	16
Do	Tondo, Station No. 5	15	4,105	65
Do	Paco, Station No. 6	0	326	0
November	Intramuros, Station No. 1	0	1,073	0
Do	Meisic, Station No. 2	58	2,672	73
Do	Sampaloc, Station No. 4	0	1,034	15
Do	Tondo, Station No. 5	8	3,771	62
Do	Paco, Station No. 6	0	164	0
December	Intramuros, Station No. 1	0	696	0
Do	Meisic, Station No. 2	24	3,422	61
Do	Sampaloc, Station No. 4	0	1,020	18
Do	Tondo, Station No. 5	15	1,835	57
Do	Paco, Station No. 6	0	225	0
Grand total		310	81,908	1,241

TABLE B.—*Month of inspection—number of pupils examined and defects found.*

Schools.	First examination.			Second examination.			Third examination.		
	Month.	Number of pupils examined.	Number of defects found.	Month.	Number of pupils examined.	Number of pupils of defects found.	Month.	Number of pupils examined.	Number of pupils of defects found.
Soler Primary School	February	512	404	September	788	714	November	709	539
Lincoln Primary School	June	869	902	do	867	735	December	780	641
Rizal Primary School	do	932	1,127	November	1,108	1,292	do		
Ermita Intermediate	do	512	284	September	486	247	December	293	349
Santa Mesa Primary	July	587	605	do	568	325			
San Sebastian Primary	do	735	673	October	697	501			
Gagalagin Primary	do	908	1,141	December	839	1,079			
Guipit and San Miguel Primary	do	1,199	1,058	October	1,237	952			
Meisic Primary School	do	2,446	2,045	do	1,236	1,784			
Qiao Primary School	do	473	483	do	550	446			
Piao Intermediate	do	942	558	do	931	488			
Philippine Normal	do	950	603	November	801	366			
Arts and Trades	do	609	472	October	577	374			
Taft Avenue Intermediate	do	279	174	September	269	114			
Intramuros Intermediate	do	250	106	do	239	75			
Tondo Intermediate	August	1,650	2,075	December	1,563	2,152			
San Nicolas Primary	do	1,514	1,344	October	998	877			
Sampaloc Intermediate	do	719	696	November	722	588			
Rotonda Primary	do	360	386	October	332	273			
Malate School	do	419	202	November	423	188			
Central School	do	504	106	December	548	120			
Deaf and Blind School	do	59	74						
Intramuros Primary	do	602	341	October	553	470			
Manila High School	do	1,602	627	November	1,513	607			
Mabini Intermediate	September	1,411	873	do	1,233	1,012			
Zurbaran Primary	do	497	369	do	453	378			
Santa Cruz Primary	do	696	659	December	712	546			
Bonifacio Primary	do	628	628	November	648	387			
Santa Clara Primary	do	1,306	1,288	December	1,241	1,205			
Philippine School of Commerce	do	950	800	November	945	780			
Pandacan School	do	251	112	December	222	142			
Santa Ana School	do	563	289	do	602	353			
Jefferson School	do	603	278						
Herran School	do	1,083	516	November	601	415			
San Andres School	do	634	313	do	633	374			
Tondo and Yango Primary	do	586	284						
Magdalena Primary	October	1,816	2,177	December	936	1,117			
Asuncion Primary	November	964	1,138	October	493	544	December	466	501
do "									
Total		31,620	25,916		27,624	21,970		2,248	2,030

* Included in San Nicolas Primary inspection.

TABLE C.—*Dangerous communicable diseases found in school children during 1919.*

Schools.	Typhoid fever.	Dysentery.	Cholera.	Cholera vibrio carriers.	Measles.	Vari-cella.	Vario-loid.	Small-pox.	Teta-nus.	Mumps.	Diph-theria.	Diph-theria carriers.	Leprosy.	Tuber-culosis pulmo-nar.
Manila Trade School.....	2					1							1	
Meisic Primary School.....	4		2											
Santa Clara Primary.....	1		1									23		
Gagalangin Primary.....		3	1											
Tayuman Primary.....	3		2											
Tondo Primary.....		2	2	1										
Manila High School.....		1	1											
Instituto de Burgos.....	1		2											
Soler Primary School.....			1											
Rizal Primary School.....	3	1	1											
Zurbaran Primary School.....	1	2	2	2										1
Tondo Intermediate School.....		1	2											
Magdalena Primary.....		1	1											
San Nicolas Intermediate.....	1		1											
Philippine School of Commerce.....		1	1											
San Nicolas Primary.....	1		1											
Mabini Intermediate.....			1											
Magat Salamat Primary.....			1	1				1						
Bonifacio Primary.....			1											
San Sebastian Primary.....			1											
Instituto de Manila.....			1											
Y. M. C. A.....	1													
Normal School.....	1													
Santa Cruz Primay.....						1								
Liceo de Manila.....	1	1												
Total.....	21	12	23	4	0	2	0	1	0	0	1	23	1	1

TABLE D.—*Annual consolidated report of schools dental clinic work, city of Manila, for the year 1919.*

Month.	New.	Male.	Female.	Former.	Treatment.	Extracted.	Amalgam fill- ing.	Cement fill- ing.	Guttapercha filling.	Cleaning.	Approved.
January.....	238	224	14	88	341	223	147	9	136	56	39
February.....	289	179	110	90	507	340	22	14	127	119	52
March.....	144	142	2	197	415	140	16	8	143	110	34
April.....	18	18	0	59	148	18	5	17	21	7	0
May.....	22	14	8	58	177	19	3	9	19	6	0
June.....	90	90	0	37	153	81	24	0	13	49	12
July.....	99	90	9	21	156	135	9	3	16	39	10
August.....	56	3	53	16	118	23	2	6	13	22	5
September.....	109	95	14	43	205	54	22	0	25	60	0
October.....	55	44	11	26	77	35	4	0	12	37	15
November.....	107	78	29	63	250	126	2	12	21	32	11
December.....	126	80	46	35	237	78	2	23	25	38	17
Total.....	1,353	1,057	296	733	2,784	1,272	258	101	571	575	195

TABLE E.—*Lectures given by school nurses.*

Schools.	Number of lectures.	Attend- ance.
Meisic Primary School.....	4	750
Gagalangin Primary School.....	2	550
Magdalena Primary School.....	2	200
Bonifacio Primary School.....	2	400
Rizal Primary School.....	1	320
Magat Salamat Primary School.....	1	180
Lincoln Primary School.....	1	500
Santa Mesa Primary School.....	1	290

DIVISION OF SANITATION IN THE PROVINCES.

Dr. EUGENIO HERNANDO, *Chief of Division.*

I

ORGANIZATION.

The provinces of Ambos Camarines, Bataan, Cavite, Laguna, and Samar, which remained under the old health organization in the previous year, were reorganized into sanitary divisions in the present year.

The Province of Ambos Camarines was reorganized into six sanitary divisions; the Province of Bataan into three; Cavite into six; Laguna into eight; and Samar into thirteen.

Therefore at the close of the calendar year, 1919, thirty of the thirty-six provinces pertaining to this division were organized into 251 sanitary divisions in which are comprised 740 of the 830 municipalities that this division embraces.

The Subprovince of Abra was separated from the main Province of Ilocos Sur, constituting itself an independent province organized into one health district composed of two sanitary divisions.

Of the regular provinces, only Romblon remains not yet organized into sanitary divisions, but it has organized two boards of health whose presidents are not doctors.

The special provinces of Batanes, Mountain Province, Nueva Vizcaya, and Palawan remain with the same sanitary organization as in previous years but their sanitary personnel was increased.

The number of municipal health districts as well as the number of municipal boards of health is less than in the past year because as soon as a province is organized into sanitary divisions the former health organization into municipal health districts or boards of health automatically ceases in accordance with law.

The number of municipalities embraced in this division is greater than that of last year due to the new municipalities that were organized during the year.

TABLE A.—Sanitary organization.

Provinces.	Organization.				Personnel.											
	Number of sanitary divisions.		Number of municipal health districts.		Number of municipal boards of health.		Number of doctors.		Number of nurses.		Number of midwives.		Number of sanitary inspectors.		Number of welfare sanitary inspectors.	
	1918	1919	1918	1919	1918	1919	1918	1919	1918	1919	1918	1919	1918	1919	1918	1919
Abra	2	2														
Albay	8	8					8	8	3	3	2	2	8	8		
Ambo Camarines							3	6	2	2	4		3	27		
Antique	4	4			3		2	1	1	3			13	13	6	3
Bataan	3	3			3	2		2					3	8		4
Batanes			1		6	6										
Batangas	7	7					9	10	5	5			20	35	3	4
Bohol	10	10					6	7	10	10	2	2	26	29	2	4
Bulacan	10	10					10	10	10	10			38	39	1	1
Cagayan	6	6					5	3					30	30	1	1
Capiz	6	6					5	5					25	45		
Cavite	5	5					1	6			2	2	28	28	1	1
Cebu	14	16	3		17		9	6	4				8	28	1	1
Ilocos Norte	4	4					2	4			2	2	78	77	3	3
Ilocos Sur	5	5					5	5	2				16	16	1	1
Iloilo	14	14					10	11	2	2	2	2	20	20	1	1
Isabela	4	4					2	2	2	2			34	37	2	2
Laguna	8	8					5	8	1		1	1	14	19	1	1
La Union	4	4	2		9		4	4	1				17	23	1	1
Leyte	17	17					11	11	9				16	16		
Mindoro	7	7					11	11					45	50	6	8
Mountain Province							3	7	8	9	1	1	8	10	1	1
Nueva Ecija	9	9					9	9	1	1			42	45	3	3
Nueva Vizcaya							1	1	2	3	1	1	7	10	1	1
Occidental Negros	12	11					6	6	2	2			26	26		
Oriental Negros	6	7					6	6	2	2			20	22	1	2
Palaawan			6						2	4			12	15		3
Pampanga	9	9					9	9	2	1			24	27	2	1
Pangasinan	14	14					14	14			7	7	46	48	1	1
Rizal	11	11					11	11	1				32	33	2	2
Romblon					2	2	2	2	1				8	8		
Samar	12	12			3		3	3	4				18	37	1	2
Sorsogon	9	9			4		5	3	1				19	21	1	1
Tarlac	5	5					5	5	1				16	16	1	1
Tayabas	14	14					12	12			1	1	34	34	2	2
Zambales	4	4					5	7					13	13	1	1
Total	215	251	12	6	47	10	205	219	60	84	22	11	793	974	36	55

As may be seen in Table A above, the sanitary personnel in the provincial service was larger in 1919 than in 1918 and this increase was not only in the technical personnel but also in their subordinates.

The population of this division having been estimated at 8,954,448 people for 1919, according to the official census for 1918, then it may be noted that if the number of doctors serving as presidents of sanitary divisions be added to the 41 district health officers and subdistrict health officers, there is a doctor for every 34,440 inhabitants and one nurse for every 69,414, considering that midwives and dispensary attendants may perform the work proper of the nurses.

The number of sanitary inspectors, considering also as such the welfare sanitary inspectors and other employees, was 1,035 in 1919, which averaged one sanitary inspector for every 8,652 inhabitants.

The sanitary personnel in the provinces are transferable from one place to another within the province in which they are serving as the requirements of the service may demand.

During the epidemics about 300 temporary sanitary inspectors were employed besides those regularly assigned to the provinces. Some of these temporary employees were paid from the health funds of the provinces and others from Insular funds.

The efficiency of the Service is not all that is desirable for two reasons:

First. Owing to the small number of employees as compared with the total population served.

Second. Because many of the sanitary inspectors are practically inefficient to discharge the duties as such, however, they are retained in the Service for lack of better ones.

This inefficiency is due to the frequent new appointments that are being issued to cover the vacancies from resignations and dismissals and therefore the desirable and efficient men are substituted with untrained ones.

To give an idea of the actual personnel, about 90 per cent of the assistant sanitary inspectors are not classified in the Civil Service and still very few of them can be transferred or mobilized without receiving in turn the corresponding resignation.

All these anomalies are indubitably due to the actual low standard of salaries which oscillates between ₱15 to ₱30 per month. The salaries allowed depend on the sums appropriated for the health funds of the provinces and the appropriation of these funds is completely under the control of the provincial and municipal authorities.

In order to assign an ordinal number to each health district into which this division is divided a new arrangement of the health districts was made in accordance with the geographical situation of the provinces. This enumeration is as follows:

1. Batanes	16. Bataan	31. Antique
2. Mountain Province	17. Rizal	32. Cebu
3. Ilocos Norte	18. Cavite	33. Oriental Negros
4. Ilocos Sur	19. Laguna	34. Occidental Negros
5. Abra	20. Batangas	35. Bohol
6. La Union	21. Tayabas	36. Palawan
7. Cagayan	22. Mindoro	37. Surigao
8. Isabela	23. Ambos Camarines	38. Agusan
9. Nueva Vizcaya	24. Albay	39. Bukidnon
10. Pangasinan	25. Sorsogon	40. Misamis
11. Zambales	26. Romblon	41. Davao
12. Nueva Ecija	27. Samar	42. Cotabato
13. Tarlac	28. Leyte	43. Lanao
14. Pampanga	29. Capiz	44. Zamboanga
15. Bulacan	30. Iloilo	45. Sulu

Of these health districts, those from the 37th to the 45th district, inclusive, belong to the Division of Mindanao and Sulu.

Inspections.—The chief of this division inspected during the year 24 of the 36 health districts pertaining to his division, expending about four months in these inspections. Some of them were inspected more than once, and in those in which an epidemic existed inspections and arrangements for the control of the epidemics were made personally by the chief of the division.

Changes in the personnel.—The following promotions were made during the year in this division:

From medical inspector to senior medical inspector:

Dr. Gabriel Intengan.
 Dr. Francisco Lopez Lubelza.
 Dr. José P. Bantug.
 Dr. Fernando Gonzales Sioco.

From senior surgeon to medical inspector:

Dr. Felipe Arenas.
 Dr. Manuel Ramirez.
 Dr. Pacifico Laygo.

From surgeon to senior surgeon:

Dr. Marcelino Asuzano.
 Dr. Juan S. Fernando.
 Dr. Eufemio Jara.

Entrance in the Service as surgeon:

Dr. Domingo Tablan.

Entrance in the Service as assistant surgeon:

Dr. Bartolome Gella.
 Dr. Donato S. Juan.

The following commissioned officers resigned:

Medical Inspector Manuel Ramirez.
Senior Surgeon Marcelino Asuzano.

The following were separated from the Service for causes stated:

Assistant surgeons—

Eguilino H. Aberin
Dr. José Zarraga, resigned with favorable notation.
Dr. ~~Dalmacio Jugueta~~, resigned with unfavorable notation.
Dr. Pedro Reyes, resigned with favorable notation.
Dr. José Gonzales, transferred to Philippine Constabulary.
Dr. Genaro Loalhate, resigned with favorable notation.
Senior Medical Inspector Luis Caballero died August 12, 1919.

Extra cantonment zone.—Owing to the organization and concentration of the Philippine National Guard for military training at the National Guard Training School, the Governor-General issued Executive Order No. 38, dated October 18, 1918, creating an Extra-cantonment Zone for the protection of the army stationed at Camp Claudio, Parañaque.

This zone protection was fixed to include all land comprised within a circle of seven (7) miles radius with Camp Claudio, situated in the municipality of Parañaque, Rizal, as its center.

In this zone were included two municipalities of the Province of Cavite and ten of the Province of Rizal.

Special sanitary regulations promulgated by the Director of Health and approved by the Secretary of Public Instruction controlled the sanitation of this zone and the sanitary force assigned to it consisted of a district health officer as chief, 6 presidents of sanitary divisions, 20 Insular sanitary inspectors, 12 provincial sanitary inspectors, 30 Insular vaccinators, 10 provincial vaccinators and 3 district nurses.

This extra-cantonment zone, by Special Order No. 1, paragraph 34, dated January 22, 1919, was placed under the direct jurisdiction of the Chief of the Division of Sanitation, city of Manila, and the activities of the district health officer assigned to said zone may be seen in the report pertaining to the division mentioned.

Methods of securing prompt information.—The same methods as stated in the report for last year were used in the present year for securing prompt sanitary information. Telephone facilities have been improved and extended in more provinces.

More offices of the district health officers were provided with the service of an automobile which notably improved the means of information and control of the service of the subordinate personnel.

The service issued Bulletin No. 20, prepared by Dr. L. R. Thompson, Passed Assistant Surgeon, U. S. Public Health Service, with regard to acquiring more efficient and scientific work for the control of the health conditions of the health districts.

The Central Office, in connection with the mentioned Bulletin, prepared a monthly report of health information.

For better illustration for the reader with regard to this matter, the mentioned report is transcribed as follows:

PROVINCIAL FORM No. 67.

MONTHLY HEALTH REPORT

INFORME MENSUAL DE SANIDAD

OF THE
DE LA

SANITARY DIVISION
DIVISION SANITARIA

FOR THE MONTH OF....., 19.....
DEL MES DE

TO THE
AL

DISTRICT HEALTH OFFICER

OFICIAL DE SANIDAD DEL DISTRITO

PROVINCE OF.....
PROVINCIA DE

.....
President of the Sanitary Division.
Presidente de la División Sanitaria.

NOTE.—(1) This report must be submitted by the Presidents of Sanitary Divisions, to the office of the District Health Officer not later than the 5th day of each month following the month for which the report is made.

(2) The District Health Officer shall in his turn submit a consolidated report to the Director of Health, Manila, not later than the 10th of each month following the month for which the report is made.

NOTA.—(1) Este report deberá ser sometido al Oficial Sanitario del Distrito no después del día 5 del mes siguiente al periodo mensual comprendido en el report.

(2) El Oficial de Distrito enviará una copia de este report consolidado, al Director de Sanidad, Manila, no después del 10 del mes siguiente al periodo mensual comprendido en el report.

MANILA
BUREAU OF PRINTING
1919

CHANGES IN PERSONNEL (Cambios en el Personal).**APPOINTMENTS (Nombramientos).**

Municipality (Municipio).	Name (Nombre).	Position (Rango).	Remarks (Observaciones).

RESIGNATIONS (Dimisiones).

Municipality (Municipio).	Name (Nombre).	Position (Rango).	Remarks (Observaciones).

CHANGES (Cambios).

Municipality (Municipio).	Name (Nombre).	Position (Rango).	Remarks (Observaciones).

SUSPENSIONS (Suspensiones).

Municipality (Municipio).	Name (Nombre).	Position (Rango).	Remarks (Observaciones).

DISCHARGES (Separaciones).

Municipality (Municipio).	Name (Nombre).	Position (Rango).	Remarks (Observaciones).

NOTE.—Under the head of "Remarks" give a short explanation of the causes or the authority of law in virtue of which the appointments, resignations, changes, suspensions, or discharges were made. Also the effective dates.

NOTA.—En la columna de las "Observaciones" dése una ligera explicación de las causas, la autoridad o ley en virtud de la cual los nombramientos, dimisiones, cambios o separaciones fueron hechas. También las fechas en que tuvieron efecto.

INSPECTIONS (Inspecciones).

GENERAL INSPECTIONS (Inspección General).

[illegible][illegible]

NOTE.—Indicate by the letters "E," "G," "F," and "P" the sanitary conditions in which the above under "General Inspections" were found; these letters meaning excellent, good, fair, poor.

inspections were found; these letters meaning excellent, good, fair, poor.

INSPECTIONS—Continued (Inspecciones—Continuación).

GENERAL INSPECTIONS—Continued (Inspección General—Continuación).

[illegible][illegible]

NOTE.—Indicate by the letters "E," "G," "F," and "P" the sanitary conditions in which the above under "General Inspections" were found; these letters meaning excellent, good, fair, poor.

SPECIAL INSPECTIONS (Inspección Especial).

[illegible][illegible]

NOTE.—“Special Inspections,” refer to all places handling foods for which a card record of each is kept by the President of the Sanitary Division.

REMARKS ON INSPECTIONS (Observaciones de las Inspecciones).

[illegible]

NOTE.—State in this tabulation the sanitary measures taken to remedy insanitary conditions found.

NOTE.—Expressar en este cuadro las medidas sanitarias que se adoptaron para remediar las condiciones insanitarias encontradas.

SANITARY IMPROVEMENTS, PERMANENT OR PROVISIONAL ESTABLISHED (Mejoras Sanitarias Permanentes o Provisionales Establecidas).

[illegible]

NOTE.—Number should include the improvements established or put into use during the month.

NOTE.—Deben ser incluidas las mejoras establecidas o puestas en uso durante el mes.

MONTHLY REPORT OF DISPENSARIES (Informe Mensual de Dispensarios).

[illegible]

WATER SUPPLIES (Suministros de Agua).

(a) **GENERAL INFORMATION** (Información General).

[illegible]

(b) SPECIAL INFORMATION (Información Especial).

Municipality (Municipio).	Number of supply (Número del suministro).	Class of supply (Clase de suministro).	Location of supply (Sitio del suministro).	Number of persons using supply (Número de personas que utilizan el suministro).	Remarks (Observaciones).
Total					

NOTES.—(a) *General Information.*—The number and kind of water supplies from which drinking water is obtained should be ascertained as accurately as possible. "Number" refers to the total number of artesian, dug wells, springs, etc., in use. "Gallons per minute," refers to the approximate number of gallons which flow from the well or can be pumped out. "Population served," refers to an estimate of the number of persons using this type of water; the total population of the three classes of supplies should equal the total population of the municipality.

(b) **Special Information.**—This information should be taken only from family record card, "Family record card," and from the "Water supply record card" on file in the office of the president of the sanitary division. "Number of supply," refers to the special number given that one supply on the family record and water supply card. Under "Class of supply," state whether artesian well, dug well, spring, river, etc. "Location of supply," refers to barrio or street where the supply is located. "Number of persons using supply," refers to the total number of persons in the families using water from the supply. "Remarks," refers to any information of value to the district health officer, as, if artesian well, whether flowing or pumped, etc.

NOTAS.—(a) *Información General.*—El número y el sistema de suministro de agua del cual se obtiene el agua para beber debe indicarse lo más exactamente posible. El "Número" se refiere al número total de pozos artesanales, pozos superficiales, manantiales, etc., en uso. Los "Galones por minuto" se refiere al número aproximado de galones que fluye del pozo o que puede extraerse por medio de la bomba. "Número de personas que los utilizan" se refiere al número estimado de personas que usan la indicada clase de agua y la población total de las tres clases de suministros debe ser igual a la población total del municipio.

(d) *Información Especial.*—Esta información debe solamente adquirirse de la "Tarjeta archivo de familia" y de la "Tarjeta archivo del suministro de agua" que están archivados en la oficina del presidente de la división sanitaria. Número del suministro" se refiere al número especial asignado a cada suministro en la tarjeta archivada de la familia. La "Tarjeta archivo de familia" debe ser revisada para determinar si el suministro es por pozos artesianos, pozo superficial, manantial, río, etc. "Sitio del suministro" se refiere al barrio o calle donde está localizado. "Número de suministro" se refiere al número de suministro. "Observaciones" se refiere a cualquier información de utilidad para el oficial sanitario de distrito; así por ejemplo el agua en el uso artesiano fluye espontáneamente o es necesario extraerla por medio de bomba, etc.

LABORATORY EXAMINATIONS (Exámenes de Laboratorio).

Month of _____, 19____
Meade

[illegible]

NOTE.—The number of laboratory examinations made during the month should be mentioned for each kind of specimen in the corresponding column, by municipalities.

NOTA.—El número de análisis verificados durante el mes para cada clase de muestra se mencionará en la columna correspondiente.

SEWAGE DISPOSAL (Disposición de Excretas).

[illegible]

NOTE.—Information regarding the disposal of excreta should be taken from the family cards as this is the only accurate record. If a resident of a sanitary division has pertaining to this subject. When only a portion of the municipality has had family cards made out for it this should be stated in the report, giving the population (taken from the family card) for which accurate information is obtainable. The information for the rest of the municipality should be estimated as accurately as possible. When family cards for an entire municipality have been completed, mention of this fact should be stated in the report.

NOTA.—La información referente a la disposición de excretas debe tomarse de las tarjetas de familia por ser el único record exacto referente a este asunto, guardado por el presidente de la división sanitaria. Cuando solamente una porción de municipio estuviere registrada en las tarjetas de familia, para dicho fin, deberá mencionarse así en el report, dando la población (tomada de la tarjeta de familia) sobre la cual población se pueda obtener información exacta. La información por el resto del municipio debe estimarse lo más exactamente posible. Cuando las tarjetas de familia de un municipio entero han sido completadas, debe hacerse constar así en el report.

STATISTICS (Estadística).

(1) GENERAL STATISTICS (Estadística General).

[illegible]

by Municipalities.
por Municipios.

Week (Semana).	Population of January 1st current (Población en 1.º de Enero del corriente año.....).	Deaths under one year (Defunciones en menores de un año).		Total deaths (Total defunciones).		Total deaths corresponding weeks past five years (Total defunciones por semana en los cinco años pasados). Epidemics excluded (Excluidas las epidemias).	
		With epidemic (Con epidemias).	Without epidemic (Sin epidemias).	With epidemic (Con epidemias).	Without epidemic (Sin epidemias).	Total deaths under one year (Total defunciones en menores de un año).	Total deaths (Total defunciones).
		Total deaths (Total defunciones).	Death rate per 1,000 births (Tanto por 1,000 nacimientos).	Total deaths (Total defunciones).	Death rate per 1,000 population (Tanto por 1,000 habitantes).	Total deaths (Total defunciones).	Death rate per 1,000 births (Tanto por 1,000 nacimientos).
Municipality of.....							
Municipio de.....							
Ending (Termina).....							
Ending (Termina).....							
Ending (Termina).....							
Ending (Termina).....							
Municipality of.....							
Municipio de.....							
Ending (Termina).....							
Ending (Termina).....							
Ending (Termina).....							
Ending (Termina).....							
Municipality of.....							
Municipio de.....							
Ending (Termina).....							
Ending (Termina).....							
Ending (Termina).....							
Ending (Termina).....							
Municipality of.....							
Municipio de.....							
Ending (Termina).....							
Ending (Termina).....							
Ending (Termina).....							
Ending (Termina).....							
Municipality of.....							
Municipio de.....							
Ending (Termina).....							
Ending (Termina).....							
Ending (Termina).....							
Ending (Termina).....							

Average population for past 5 years.....
Promedio de población por los 5 años pasados.....

WORK OF DISTRICT AND MUNICIPAL NURSES AND MIDWIVES
(Labor de las Nurses y Comadronas de Distrito y Municipales).

[illegible]

COMMUNICABLE DISEASES (Enfermedades Comunicables).
Summary Report of Communicable Diseases, month of
Report Resumen de las Enfermedades Comunicables, mes de

Name of diseases (Nombre de las enfermedades).	Municipality of		Municipality of		Municipality of		Municipality of		Municipality of		Total.	
	Cases.	Deaths.	Cases.	Deaths.	Cases.	Deaths.	Cases.	Deaths.	Cases.	Deaths.	Cases.	Deaths.
Actinomycosis (Actinomicosis)												
Anthrax (Carbunclo)												
Amoebic dysentery (Disenteria amebica)												
Bacillary dysentery (Disenteria bacilar)												
Cholera (Cólera)												
Cerebrospinal meningitis (Meningitis cerebro spinal)												
Conjunctivitis neonatorum (Conjuntivitis neonatorum)												
Diphtheria (Difteria)												
Dengue (Dengue)												
Filaria (Filariasis)												
Glanders (Muermo)												
Hookworm (Anquilostomiasis)												
Leprosy (Lepros)												
Measles (Sarampión)												
Plague (Peste)												
Polio-myelitis (Poliomielitis)												
Rabies (Hidrofobia)												
Scarlet fever (Escarlatina)												
Smallpox (Viruela)												
Syphilis (Sífilis)												
Typhoid fever (Fiebre tifoidea)												
Typhus (Tifus exantemático)												
Tuberculosis of lungs (Tuberculosis pulmonar)												
Tuberculosis of other organs (Tuberculosis de otros órganos)												
Tetanus (Tétano)												
Trachoma (Tracoma)												
Varioloid (Varioloides)												
Variola (Varicela)												
Whooping cough (Tos ferina)												
Yellow fever (Fiebre amarilla)												
Influenza (Gripe o catarro)												
Pneumonia (Pneumonia)												
MOST COMMON DISEASES (ENFERMEDADES MÁS COMUNES).												
Cancer (Cáncer)												
Malaria (Malaria o Paludismo)												
Acute bronchitis (Bronquitis aguda)												
Bronchopneumonia (Broncopneumonia)												
Convulsions of infants (Convulsiones en los niños)												
Simple meningitis (Meningitis simple)												
Congenital debility (Debilidad congénita)												
Beriberi, adult (Beriberi en adultos)												
Beriberi, infantile (Beriberi infantil)												
Diarrhea and enteritis under 2 years (Diarrea y enteritis en menores de dos años)												
Diarrhea and enteritis over 2 years (Diarrea y enteritis desde 2 años para arriba)												
Total												

NOTES.—(a) The above form should be made out for each municipality. (b) The number of cases reported should be not only those noted in the death certificates, but all known cases, i. e., there may be 100 cases of tuberculosis reported and only 27 deaths from this cause.

NOTAS.—(a) Debe destinarse una hoja como la presente para cada municipio. (b) El número de casos que se reporten deben de ser no solamente los anotados en los certificados de defunción sino todos los conocidos; por ejemplo pueden haberse encontrado 100 casos de tuberculosis y solamente aparecer 27 en los certificados de defunciones.

SANITARY MEASURES TAKEN FOR THE ERADICATION OF COMMUNICABLE DISEASES
(Medidas Sanitarias Tomadas para Erradicar las Enfermedades Comunicables).

NOTE.—Indicate briefly the measures taken against such diseases.
NOTA.—Reseñar brevemente las medidas que se hayan tomado contra tales enfermedades.

PUBLICITY AND SANITARY EDUCATION (Publicidad y Educación Sanitaria).

NOTE.—Give brief information regarding public lectures, exhibitions, fiestas, baby contests, etc.
NOTA.—Reseñar brevemente todo lo concerniente a las conferencias públicas, exhibiciones, fiestas, concurso de niños, etc.

MISCELLANEOUS (Miscelánea).

NOTE.—Anything of interest not included in the above.
NOTA.—Alguna cosa de interés no incluida en los títulos de este report.

GENERAL SANITARY INFORMATION (Información General Sanitaria).

(1) **VACCINATIONS (Vacunaciones).**

[illegible]

(2) FLY NUISANCE (Nocividad por las Moscas).

[illegible]

NOTE.—Mention whether or not any control is exercised over the method of disposal of manure, if so what?
NOTA.—Menciónese si existe o no alguna medida que regule el método de disposición del estiércol y menciónese en qué consiste.

(3) MOSQUITO BREEDING AREAS (Áreas donde los mosquitos se desarrollan).

Municipality (Municipio).

Number of
general mosquito
breeding areas
(Número de los sitios
donde generalmente
se desarrollan
mosquitos).Number of local
nuisances causing
mosquito breeding
(Número de
las causas locales
que originan
el desarrollo de los
mosquitos).Number of local
nuisances corrected
(Número de las
causas locales nocivas
suprimidas).

Total

NOTE.—Mention any engineering work going on or done which will improve the general mosquito breeding areas.

Nota.—Menciónese alguna obra de ingeniería permanente en construcción, o terminada, que suprimirá los focos u criaderos principales de mosquitos.

Total to date ..
Total en esta fecha

[illegible]

NOTE.—The above "General Sanitary Information" should be taken from the Family Card Record. When a municipality is completed, note should be made of the fact and no further report from that municipality will be necessary unless changes occur.

NOTA.—La anterior "Información General Sanitaria" debe obtenerse de la Tarjeta Archivo de Familia. Cuando un municipio se haya completado debe expresarse así no siendo ya necesario el envío de partes posteriores a menos que algún cambio ocurriese.

Month of _____, 19____
Made

[illegible]

NOTA.- En la columna correspondiente a los "Desinfectantes" se expresará la clase y cantidad de desinfectantes existentes al fin del mes. En la columna correspondiente a "Bombas desinfectantes" y bajo el encabezamiento de "En buenas condiciones" se expresará el número de bombas que estuvieran listas para el uso y aquellas que estuvieran estropeadas o que no puedan servirse se expresarán en la columna bajo el encabezamiento "En mala condición."

176932—9

The provisions of the law creating the health funds for the maintenance of the sanitary organization in the provinces remain defective because local politics have much to do with it and this dependency indubitably spoils the efficiency of the Health Service.

In order to secure full efficiency in the Health Service, its organization and funds should be centralized, and entirely independent of local politics because nearly all sanitary measures are coercive and people very seldom follow them voluntarily.

One district health officer states with reference to this point of view the following: "It has been observed that shortness of funds and faulty discipline, due to local influence and condescension in the service, have produced thousands and thousands of deaths every year."

The majority of the municipalities give the least sum authorized by law as contribution to the health fund and for this reason no improvements, either in personnel or structural work, can be made in health matters.

The following is a list of the provinces embraced in this division with their per capita given in 1919 as contribution to the health fund:

Health contribution per capita.

Province.	Population.	Municipal appropriations.	Provincial appropriations.	Total.	Per capita.		
					Municipal.	Provincial.	Total.
Abra	71,721	P2,591.92	P1,000.00	P3,591.92	P0.04	P0.014	P0.05
Albay	321,745	21,549.08	28,549.99	50,099.07	.07	.09	.16
Ambos Camarines	271,347	14,038.17	14,038.17	28,076.34	.05	.05	.10
Antique	159,644	6,256.97	4,000.00	10,256.97	.04	.02	.06
Bataan	58,380	2,559.31	2,559.31	5,118.62	.05	.05	.10
Batanes	8,214						
Batangas	340,195	23,047.54	13,000.00	36,047.54	.07	.04	.11
Bohol	359,600	14,827.76	14,827.76	29,655.52	.04	.04	.08
Bulacan	248,863	21,882.39	20,000.00	41,882.39	.09	.08	.17
Cagayan	199,938	10,388.61	10,388.61	20,777.22	.06	.06	.12
Capiz	292,496	12,613.91	8,000.00	20,613.91	.04	.03	.07
Cavite	157,347	13,415.14	6,000.00	19,415.14	.08	.03	.11
Cebu	857,410	32,700.82	32,700.82	65,401.64	.04	.04	.08
Ilocos Norte	218,951	9,768.84	4,025.00	13,793.84	.04	.02	.06
Ilocos Sur	217,410	10,629.98	8,000.00	18,629.98	.05	.04	.09
Iloilo	508,272	35,312.53	17,000.00	52,312.53	.07	.03	.10
Isabela	112,965	5,889.21	5,889.21	11,778.42	.05	.05	.10
Laguna	195,371	18,679.24	10,000.00	28,679.24	.09	.05	.14
La Union	160,575	7,708.50	7,708.50	15,417.00	.05	.05	.10
Leyte	597,995	26,324.97	13,600.00	39,924.97	.04	.02	.06
Mindoro	73,922	3,750.90	3,750.90	7,501.80	.05	.05	.10
Mountain Province	250,023						
Nueva Ecija	227,636	14,972.94	14,972.94	29,945.88	.06	.06	.12
Nueva Vizcaya	35,189						
Occidental Negros	397,325	21,497.81	21,497.81	42,995.62	.05	.05	.10
Oriental Negros	272,236	13,468.26	7,851.64	21,319.90	.05	.03	.08
Palawan	69,061						
Pampanga	257,641	15,069.29	15,069.29	30,138.58	.06	.06	.12
Pangasinan	567,644	38,085.53	18,000.00	56,085.53	.07	.03	.10
Rizal	230,205	20,640.57	20,640.57	51,281.14	.08	.08	.16
Romblon	64,576	2,569.50	2,569.50	5,139.00	.04	.04	.08
Samar	380,211	21,055.20	6,000.00	27,055.20	.05	.02	.07
Sorsogon	245,692	12,982.65	2,209.67	15,192.32	.05	.006	.06
Tarlac	172,022	9,198.41	9,198.41	18,396.82	.05	.05	.10
Tayabas	268,472	27,516.88	28,570.00	56,086.88	.10	.10	.20
Zambales	83,620	4,000.00	4,000.00	8,000.00	.04	.04	.08
Total	8,953,818	492,423.33	375,618.08	868,041.41	.06	.04	.10

From the above table it may be noted that Tayabas is the only province that has given a contribution of ₱0.10 per capita for sanitary purposes, both municipal and provincial. Next to it follow the Province of Bulacan and the Province of Laguna, each having a municipal contribution of ₱0.09 per capita. While on the other hand, Romblon and Abra are leading the list as the least contributors, Romblon having nothing for municipal contribution, while Abra had a provincial contribution of ₱0.014 only per capita.

As for the total contribution per capita, Tayabas is heading as the greatest contributor, and Abra as the least, the contribution of the former being ₱0.20 and that of the latter ₱0.05 only.

The average contributions per capita for all the provinces, both municipal and provincial, and also the total, are ₱0.06, ₱0.04, and ₱0.10, respectively, with which amount it is not believed that much can be done in sanitary plans.

It should be stated, in order to avoid false commentary, that in the amount considered is not included the ₱2,540,536 that the Insular Government contributed for sanitary purposes for all the Islands, including the Department of Mindanao and Sulu.

In this tabulation only the contributions of the provinces pertaining to this division are indicated, making an exclusion of the city of Manila and the provinces pertaining to other divisions; but from the ₱2,540,536.00 mentioned above only ₱150,087.06 was expended in this division.

The cost of living at present is higher than in previous years and the regular wages of an ordinary working man is not less than two pesos per day. A carpenter, mason, etc., earns four or five pesos per day, while the salary of the sanitary inspectors in the provinces oscillates from ₱15 to ₱30 per month, with which it is impossible to cover their most peremptory necessities of life.

The salary of a doctor who is president of a sanitary division is from ₱100 to ₱125 per month while a chauffeur or secondary employee in a business firm earns the same or more but with less responsibility.

While this question remains in the same status it is not possible to attain any improvement in the service.

In order to avoid failure of the municipalities to provide funds for the purchase of medicines, this item was included with the other necessities of the service and the following circular referring to the distribution of health funds was issued:

PHILIPPINE HEALTH SERVICE.

MANILA, June 30, 1919.

CIRCULAR }
R 81. }

To all districts health officers:

Letters from superintendents of public schools requesting medicines to be distributed by the teachers among the pupils and stating that very small or no supply of medicines exists in municipal or provincial stock have

frequently been received in this office. Complaints for the same cause mentioned above have also been received from municipal councils and private individuals which have been time and again proven to be well founded. To stop such anomalies, your attention is invited to the provisions of section 1011 of the Administrative Code, which, with mandatory character, provides that a suitable stock of drugs shall be maintained in every municipality. Such provision of law must be complied with and such a policy as will attain the said end should be adopted.

District health officers, therefore, shall see that, in the preparation of their budget for the year 1920 and every year thereafter, the said provisions of the Administrative Code are complied with, and for the purpose health funds should be allotted tentatively as follows:

	Per cent.
For salaries.....	From 60 to 65
For traveling expenses.....	From 10 to 15
For medicines, equipment and disinfectants.....	From 30 to 20
Total	100-100

V. JESUS,
Acting Director of Health.

By this means the distribution of the health funds was made as shown in Table B. (See pages 136-137.)

Said table shows that in the year 1919 the total revenues were ₱1,244,011.06 or ₱209,343.12 over the revenues of the preceding year.

The balance in 1919 was ₱135,012.76 as against ₱214,657.82 in the preceding year. The sum expended for salary of personnel, traveling expenses, medicines and disinfectants, and other services was more than in 1918, but six provinces incurred a deficit.

In 1919, 60 per cent of the total revenues was expended for salaries of the personnel, 12 per cent for traveling expenses, including in this item the per diems, and 14 per cent for medicines, disinfectants and medical and surgical equipment.

The estimated rate per capita, including the balance from the year 1918, is ₱0.13, which is one centavo more than that of last year, or ₱0.14 if compared with the total amount expended. The per capita expended in medicines and disinfectants was ₱0.02, the same as in the year 1918.

The balance remaining at the end of the year was due to the same causes as stated in the report for 1918.

The Executive Bureau issued the following circular for applications for loans by provinces and municipalities from Government institutions for applying same to other activities in the way of permanent sanitary improvements. This circular was indorsed to the district health officers, as follows:

PHILIPPINE HEALTH SERVICE.

MANILA, June 30, 1919.

CIRCULAR }
R 51. }

To district health officers and presidents, municipal boards of health and sanitary divisions:

For your information and guidance, Provincial Circular No. 167, June 26, 1919, Executive Bureau, is transmitted herein:

“THE GOVERNMENT OF THE PHILIPPINE ISLANDS,
“DEPARTMENT OF THE INTERIOR,
“EXECUTIVE BUREAU.

MANILA, June 26, 1919.

PROVINCIAL CIRCULAR NO. 167.

“Subject.—Applications for loans by provinces and municipalities from the Insular Government, the Philippine National Bank, or the Postal Savings Bank.

“It is hereby announced that provinces and municipalities may borrow money from the Insular Government, the Philippine National Bank, or the Postal Savings Bank for permanent public improvements, such as the construction of school buildings, provincial capitol buildings, municipal presidencias, markets, roads, and bridges, etc. In connection with applications for such loans, the following instructions are hereby issued for the information and guidance of all concerned:

“1. All projects the whole or part of the cost of which will be borrowed, need be approved by this office.

“2. All applications for loans by provincial boards or municipal councils for the purposes above enumerated, whether from the Insular Government, the Philippine National Bank or the Philippine Postal Savings Bank, should *always* be coursed through the provincial treasurer, who should forward the papers to this office with a statement showing the financial condition, resources and liabilities of the province or municipality applying for the loan, together with the budget statement of the province or municipality concerned on Provincial Form No. 2 (A) corresponding to the year preceding that of the filing of the application. In the case of loans applied for by municipalities, the provincial treasurer should, in addition to the information required above, submit a statement of the balances of loans, other than Insular and bank loans, if any, granted the municipality by the province, together with the amount of the installment payment and the corresponding interests due thereon during the unexpired term of the loan.

“3. The comment and recommendation of the district engineer on all loan applications relating to public works should always be secured and attached to the papers in accordance with Provincial Circular No. 150 of this office. In the case of loan applications for school purposes the comment and recommendation of the division superintendent of schools should also be secured and forwarded with the application, pursuant to an unnumbered circular of July 24, 1914, of this office.

“4. No project relating to the construction of potable water systems will be approved by this office unless the Director of Science certifies that the water to be used is potable and free from germs and other substances injurious to the public health. The certificate of the Director of Health

to the effect that the source of the water supply is not contaminated and will not be in danger of being contaminated will also be required.

"5. If the loan applied for is for the construction of a presidencia, market, provincial capitol building, or other provincial or municipal permanent public improvement, and the province or municipality concerned is financially able to contract the desired loan, the provincial treasurer should also forward with the application (a) a resolution of the provincial board or the municipal council, as the case may be, approving the site for the public improvement to be undertaken, (b) sketch plans in triplicate of said site prepared by the district engineer, showing its area as well as its location with reference to the rest of the vicinity where said site is located, and (c) information whether such site is owned by the Insular, provincial or municipal government or by private individuals. Said site may be selected by the municipality or province applying for the loan, in which case it should be approved by this office, or, if same is not satisfactory a suitable site will be selected by a representative of this office.

"6. Once the site selected is approved by this office, and such site is owned by private individuals, the provincial board or municipal council concerned should take immediate steps to acquire the same through condemnation proceedings or purchase, in accordance with the provisions of provincial Circular Nos. 11 and 15 of this office.

"If the site is to be acquired through condemnation proceedings, the province or municipality concerned should forward a resolution, setting forth: (1) the necessity for obtaining the particular site desired; (2) the amount offered by the province or municipality for the land and improvements thereon; (3) the approximate market value of such land and improvements, based upon the most recent real estate transactions in the vicinity; (4) the assessed valuation of the property for the purposes of taxation, and (5) the amount, if any, demanded by the owners. The resolution should further authorize the appropriation of a sum sufficient to cover the cost of the property and the expenses of the condemnation proceedings.

"If the site is to be acquired by purchase, and same is not registered under the Land Registration Act, the provincial board or the municipal council, as the case may be, should, by resolution, approve the site selected and authorize its purchase for the purposes desired. A deed to the land as per form attached to Provincial Circular No. 15 of this office, should then be obtained from the owner or owners, and a certified copy thereof submitted to this office, accompanied by an opinion of the provincial fiscal as to the validity of the title proposed to be conveyed to the province or municipality. An indemnifying bond in an amount equal to the sum paid for the land the estimated cost of the improvements contemplated to be placed therein, should also be forwarded to this office.

"If the land is registered the owner's duplicate certificate of title should be submitted to the district auditor with the voucher covering the payment, in accordance with section 184 of the Bureau of Audits Manual of Instruction to Provincial and Municipal Treasurers, and this office, advised of the transaction.

"If the property belongs to the Insular, provincial or municipal government, a statement to this effect, together with a description of the land, should be forwarded with the papers required in paragraph 5 (a) and (b) of this circular. Upon receipt of this statement, and if the property belongs to the Insular Government, this office will take the necessary steps

to have said property reserved for the purposes for which the loan is desired, but if the property belongs to the provincial government, the municipality applying for the loan should secure the same through purchase or donation and forward the corresponding deed to this office.

"7. Blank forms of loan resolutions sent by the Secretary of Finance or the Postal Savings Bank authorities to the province or municipality applying for a loan, for adoption, should be executed in strict accordance with instructions received by said province or municipality. In general, no change should be made in the proposed resolution forwarded, but all blanks therein should be filled as contemplated.

"8. If the loan applied for is approved, preliminary ground and elevation plans, together with the corresponding estimates, will be prepared by the Bureau of Public Works and forwarded to the provincial board or the municipal council, as the case may be, for selection. Upon receipt thereof, the provincial board for the municipal council concerned should, by resolution, approve the scheme desired and grant the necessary authorization of the Director of Public Works for the preparation of the final plans, the advertisement for bids, and acceptance or rejection of bids received. Full instructions concerning this particular and prescribed by the Director of Public Works will be sent by this office with every loan approved, and the province or municipality concerned should see to it that said instructions are fully and strictly complied with. The execution of all public works should be made under the direction and supervision of the Bureau of Public Works.

"In the case of loans for school building construction purposes, the school building should be constructed in accordance with the standard plan of the Bureau of Education and on a site satisfactory to the Director of that Bureau.

"9. Provincial boards and municipal councils concerned will be timely advised by this office of the release of the loan granted.

"10. No investment of the whole or part of the amount loaned to any province or municipality for purposes other than those for which the loan was granted, should be made without the express authorization of the Secretary of Finance in the cases of loans from the Insular Government and the Philippine National Bank, or that of the Postal Savings Bank Board when the loan is obtained from the Postal Savings Bank.

"Provincial treasurer will please transmit the contents of this circular to the municipalities.

"(Sgd.) A. DE LAS ALAS,
"Acting Chief Executive Bureau."

It is desired that all officers concerned avail themselves of this opportunity, and that the necessity for borrowing money for permanent sanitary improvements such as water supply, sewage and garbage disposal, and the construction of parks, markets and slaughterhouses be brought to the attention of the provincial board or municipal councils at the earliest possible date. Reports on action taken in the premises should be duly submitted to this office.

(Sgd.) V. JESUS,
Acting Director of Health.

TABLE B.—Financial statements.

Province.	Appropriations.				Total revenues.
	Balance from 1918.	Municipal allotments.	Provincial allotments.	Other receipts.	
Abra.....	₱3,130.36	₱2,591.92	₱1,000.00	.....	₱6,722.28
Albay.....	20,336.86	21,549.08	28,549.99	.....	76,337.26
Ambos Camarines.....	.....	14,038.17	14,038.17	.....	28,076.34
Antique.....	2,841.53	6,256.77	4,000.00	.....	12,598.30
Bataan.....	.....	2,559.31	2,559.31	.....	5,118.62
Batanes.....	.....	.....	.....	3,200.00	3,200.00
Batangas.....	7,438.07	27,047.54	13,000.00	198.00	47,683.61
Bohol.....	17,895.55	14,827.76	14,827.76	4,227.32	51,778.39
Bulacan.....	19,036.40	21,832.39	20,000.00	3,595.50	64,514.29
Cagayan.....	15,976.99	10,388.61	10,388.61	.....	36,754.21
Capiz.....	3,354.15	12,663.91	8,000.00	.....	24,018.06
Cavite.....	.....	13,415.04	6,000.00	.....	19,415.04
Cebu.....	853.72	32,700.82	32,700.82	558.00	66,813.36
Ilocos Norte.....	6,154.62	9,768.84	4,025.00	.....	19,948.46
Ilocos Sur.....	583.49	10,629.98	8,000.00	.....	19,218.47
Iloilo.....	.....	35,312.53	17,000.00	.....	52,312.53
Isabela.....	14,523.10	3,839.21	5,889.21	.....	26,301.52
Laguna.....	2,049.07	7,708.50	7,708.50	1,687.76	30,367.00
La Union.....	24,305.39	26,324.97	13,600.00	5.06	17,471.13
Leyte.....	9,567.97	3,750.90	.....	.....	64,230.86
Mindoro.....	9,000.00	.....	.....	98,334.00	107,334.00
Mountain Province.....	22,970.32	14,972.94	14,972.94	.....	52,916.20
Nueva Ecija.....	3,633.74	21,497.81	21,497.81	14,508.00	14,608.00
Nueva Vizcaya.....	7,973.97	13,468.26	7,851.64	.....	46,629.36
Occidental Negros.....	7,102.25	.....	.....	15.70	29,309.57
Palawan.....	3,256.18	15,069.29	15,069.29	11,640.00	18,742.25
Pampanga.....	8,827.65	38,085.53	18,000.00	1,667.43	35,062.19
Pangasinan.....	.....	20,640.58	20,640.58	7,624.51	72,537.69
Rizal.....	830.83	.....	.....	.....	42,111.99
Romblon.....	.....	.....	2,589.00	.....	2,589.00
Samar.....	.....	21,055.20	6,000.00	.....	27,055.20
Sorsogon.....	269.56	12,982.65	2,203.67	.....	20,461.86
Tarlac.....	1,886.62	3,198.41	9,198.41	5,000.00	20,282.44
Tayabas.....	1,349.16	27,516.88	28,570.00	.....	57,436.04
Zambales.....	11.25	4,000.00	4,000.00	.....	8,011.25
Total.....	214,657.82	496,473.04	375,617.61	157,262.59	1,244,011.06

Province.	Expenditures.						Total expenses.	Balance at the end of 1919.	Deficits at the end of 1919.
	Salaries of personnel.	Traveling expenses and per diem.	Medicines and disinfectants.	Medical and surgical equipments.	Other equipment.	Other expenses.			
Abra.....	P5,344.29	P185.50	P506.13		P355.46	P65.62	P6,457.00	P285.28	
Amboyan.....	37,504.87	3,771.88	26,078.12	P1,016.99	488.01	1,994.06	70,853.93	4,483.33	
Antique.....	15,984.97	1,707.32	440.67	401.00	28.64	257.48	18,330.95	9,745.38	
Bataan.....	3,683.68	213.50	1,745.41	52.65	24.64		11,303.58	1,294.77	
Batanes.....	1,456.26	165.95	304.04				4,577.80	540.82	
Batanga.....	26,114.03	4,428.17	5,450.18		533.39	8.95	1,926.25	1,273.75	
Bohol.....	38,992.74	5,748.68	3,251.18	13.19	1,633.62	660.50	40,299.91	11,148.89	
Bulacan.....	38,726.65	8,467.41	7,996.14		4,716.16	952.17	60,858.53	11,675.76	
Cagayan.....	14,586.72	4,647.92	1,668.01		473.32	3,381.18	24,757.15	11,997.06	
Capiz.....	14,455.45	4,034.27	914.01		52.06	34.56	19,490.35	4,527.71	
Cavite.....	13,193.81	912.45	1,494.72		161.62	18.25	15,768.60	3,646.44	
Cebu.....	54,863.34	8,099.40	11,460.41	280.00	15.85	13,496.26	88,215.26	1,550.54	P21,401.90
Ilocos Norte.....	12,838.80	1,879.62	2,903.68		222.88	458.84	18,997.82	238.11	
Ilocos Sur.....	15,657.06	2,192.24	612.55			458.51	18,920.86	1,536.46	
Iloilo.....	33,229.72	6,989.57	8,792.43	286.35		1,478.00	50,776.07	7,407.82	
Isabela.....	10,792.99	5,338.20	2,422.11			340.40	18,593.70	3,236.95	
Laguna.....	19,346.06	3,090.03	4,200.71	(b)	583.25	(a)	27,130.05		
La Union.....	10,195.19	3,904.40	2,715.51	164.39		879.63	17,859.22		388.00
Levite.....	49,422.73	12,628.31	19,877.94			2,407.62	85,059.37	20,829.01	
Mindoro.....	6,951.39				723.37	4,626.48	12,927.25	4,142.52	
Mountain Province.....	41,622.06	13,163.07			578.78	35,418.22	106,489.51	1,844.49	
Nueva Ecija.....	25,196.07				15,286.16	994.56	33,426.87	19,489.33	
Nueva Vizcaya.....	34,913.23	2,757.59	2,389.13	1,500.00	835.52	1,022.90	12,560.95	2,047.05	
Ocidental Negros.....	19,460.90	2,886.44	4,414.20			1,191.95	26,592.59	3,122.79	
Oriental Negros.....	7,900.31	943.73	3,183.94	82.74	229.69	1,978.57	13,149.59	5,592.67	
Palawan.....	24,344.30	4,214.39	3,490.17			815.37	26,592.59	7,716.98	
Pampanga.....	42,089.82	11,074.79	5,875.39	(b)	396.98	227.42	35,058.48	3.71	
Pangasinan.....	30,569.47	15,231.16	c15,231.16	1,147.72	344.60	2,082.40	71,920.49	617.20	
Rizal.....	4,346.61	447.02	447.02	2,561.97	382.72	517.80	38,825.59	3,286.40	
Romblon.....	1,623.28	355.52	97.28		12.91		2,088.99	480.01	
Samar.....	11,926.08	1,884.83	2,664.24			169.52	16,644.62	10,410.58	
Sorsogon.....	15,270.18	2,299.14	2,359.51			683.05	20,611.88	150.00	
Tarlac.....	12,453.12	1,343.46	1,619.23	(b)		1,686.16	17,105.97	3,176.47	
Tayabas.....	38,699.35	12,141.03	a10,431.33	(b)	233.47	731.62	62,206.80	4,370.76	
Zambales.....	9,145.40	1,073.39	145.21	22.05		150.12	10,539.17	2,527.92	
Total.....	742,292.29	140,269.25	162,200.77	7,529.05	28,138.57	78,636.05	1,159,065.98	135,012.76	50,067.68

* Included with "Other equipment."

b Included with "Medicines and disinfectants."

c Including office supplies.

a Including the per diems.

Only 9 provinces and 26 municipalities applied for loans in the following amounts and for the purposes stated:

Loan requested by municipalities

Province.	Municipalities.	Amount of the loan.	Purposes.
Antique.....	Pandan.....	₱1,500.00	For artesian well.
Do.....	Dao.....	5,000.00	Do.
Do.....	Sibalon.....	1,560.00	Do.
Ilocos Norte.....	Laoag ^a		For water works.
Iloilo.....	Iloilo.....	40,000.00	For hospital.
Do.....	Dumangas.....	25,000.00	For public market.
Laguna.....	Majayjay.....		
Do.....	Nagcarlan.....		
Do.....	Pagsanhan.....	230,119.16	For water works.
Do.....	Santa Cruz.....		
Do.....	Majayjay.....	13,000.00	For public market.
Leyte.....	Burauen.....	10,000.00	For cemetery.
Occidental Negros.....	Bacolod.....	6,000.00	For public market.
Do.....	Talisay.....	25,000.00	Do.
Rizal.....	Pasig.....	80,000.00	For public market.
Samar.....	Catbalogan.....	20,000.00	For water works.
Tayabas.....	Atimonan.....	25,000.00	For public market.
Do.....	Lopez.....	22,000.00	Do.
Do.....	Lucban.....	9,000.00	Do.
Do.....	do.....	25,000.00	For water works.
Do.....	Lucena.....	15,000.00	For public market.
Do.....	do.....	56,000.00	For water works.
Do.....	Mauban.....	18,000.00	For public market.
Do.....	Pagbilao.....	15,000.00	Do.
Do.....	Sariaya.....	12,500.00	Do.
Do.....	Tayabas.....	18,000.00	Do.
Do.....	do.....	26,000.00	For water works.
Do.....	Candelaria.....	25,000.00	For public market.
Do.....	do.....	3,000.00	For artesian wells.
Do.....	Gasán.....	3,000.00	For public closet.
Do.....	Tiaong.....	3,000.00	For artesian well.
Total.....		742,679.16	

^a Amount of the loan is not reported.

As may be seen from the data transcribed due attention has been given by the provincial and municipal authorities to such an important matter.

III.

VITAL STATISTICS.

Vital statics of four consecutive years are given in this report.

The data given for the years 1916, 1917, and 1918 below differ from the data given in the report for the year 1918 because the district health officers, in submitting their reports for the present year, corrected some incorrect data given in the last year; but notwithstanding this, the writer must state that the data transcribed remains yet only approximately because, it is regretted to state that, statistics in some health districts are very poorly kept and data furnished either by the health officers or municipal secretaries cannot be accepted without further analysis. However, the following statistics may be accepted as fairly accurate:

1919

Provinces.	Estimated population.	Deaths.	Births.	Marriages.	Infant mortality under one year.*	Deaths without medical attendance.	Death rate.	Birth rate.	Marriage rate.	Infant mortality rate.	Rate of deaths without medical attendance.
							Percent.	Percent.	Percent.	Percent.	Percent.
Abra.....	68,728	1,468	1,948	358	323	1,250	21.39	10.43	16.81	165.81	85.16
Albay.....	289,333	12,272	10,976	1,638	2,526	11,579	46.05	40.75	12.08	240.16	93.34
Ambos Camarines.....	258,554	9,542	7,402	1,546	1,438	9,461	37.29	28.62	11.95	194.00	92.00
Antique.....	139,812	5,425	3,924	864	741	5,413	38.41	28.34	14.40	237.00	99.00
Bataan.....	47,995	2,600	1,871	1,481	741	2,156	52.17	37.95	29.32	391.70	78.70
Batanes.....	8,358	152	320	66	24	85	18.80	38.28	15.75	75.00	92.90
Batangas.....	361,546	11,714	14,499	2,680	3,072	11,093	32.80	40.60	15.01	214.77	94.69
Bohol.....	369,886	11,495	13,127	2,207	2,788	11,466	31.70	36.70	12.50	112.20	99.00
Bulacan.....	251,923	8,733	8,716	2,536	2,336	8,454	35.00	34.59	19.82	291.00	85.70
Cagayan.....	161,909	5,631	6,896	1,573	1,429	5,444	34.60	42.20	19.50	207.30	97.30
Capiz.....	228,811	7,439	8,545	1,391	1,331	7,255	31.88	36.61	23.84	154.47	97.00
Cavite.....	134,678	5,045	4,358	1,207	1,682	1,495	41.91	32.35	17.10	344.73	72.54
Cebu.....	938,274	31,102	31,865	6,439	29,497	33.10	37.60	33.90	10.60	202.78	97.00
Ilocos Norte.....	233,189	8,645	6,980	1,502	1,795	8,896	37.60	30.00	13.30	257.10	98.00
Ilocos Sur.....	234,548	8,283	6,424	2,097	1,673	7,954	35.33	27.34	17.88	260.42	96.40
Iloilo.....	465,563	17,632	17,233	2,617	3,419	16,542	37.13	36.92	11.16	314.45	97.80
Isabela.....	79,711	2,960	3,241	787	655	2,629	37.13	40.66	19.75	202.09	99.00
Laguna.....	162,030	8,591	7,362	1,809	2,456	7,496	53.02	45.44	22.39	333.60	87.13
La Union.....	140,829	4,987	5,001	911	2,992	3,941	33.75	39.43	15.92	198.30	77.00
Levite.....	599,918	16,077	19,888	3,911	4,197	15,711	26.70	33.10	13.16	211.03	97.72
Mindoro.....	55,210	2,024	1,317	321	338	1,711	36.70	24.00	11.60	256.40	84.00
Mountain Province.....	189,566	4,146	3,641	8,562	578	2,814	21.87	19.15	90.33	158.75	67.62
Nueva Ecija.....	125,996	9,140	5,965	2,139	2,120	8,254	66.85	41.27	39.52	385.40	92.10
Nueva Vizcaya.....	27,428	1,140	5,828	2,276	293	787	41.55	30.18	20.12	241.78	63.40
Occidental Negros.....	307,198	13,122	9,720	2,456	2,007	12,940	42.05	31.64	15.99	206.04	93.28
Oriental Negros.....	194,821	9,786	7,153	1,195	2,073	9,778	49.83	36.50	20.78	276.38	49.59
Palawan.....	33,075	763	1,123	249	97	719	20.04	33.95	15.80	86.37	54.23
Pampanga.....	223,889	9,908	10,068	2,569	3,080	8,198	43.40	44.00	22.62	305.91	74.30
Pangasinan.....	463,234	27,823	22,044	6,569	5,789	27,113	59.40	47.17	28.68	262.68	97.60
Rizal.....	143,894	7,350	6,876	2,240	1,964	5,429	48.27	45.64	23.88	285.25	77.00
Romblon.....	60,063	1,437	1,710	438	375	1,457	23.91	31.18	14.50	200.53	99.00
Samar.....	311,339	11,739	12,630	1,248	2,452	11,523	37.80	40.50	18.05	194.30	98.00
Sorsogon.....	194,930	11,037	6,398	1,196	2,055	10,610	56.31	31.79	12.63	321.19	96.13
Tarlac.....	180,925	6,980	6,797	1,668	1,777	5,768	35.32	40.15	19.70	257.67	96.46
Tayabas.....	257,652	9,251	8,483	2,593	2,479	7,629	36.63	32.76	19.41	292.23	82.46
Zambales.....	60,821	2,311	2,548	667	489	2,213	38.60	42.40	22.70	189.20	95.00
Total.....	7,998,684	307,510	288,046	70,844	63,330	282,690	39	36	18	237	92

TABLE C-1.—Condensed report.

Province.	1918										
	Estimated population.	Deaths.	Births.	Marriages.	Infant mortality under one year.	Deaths without medical attendance.	Death rate.	Birth rate.	Marriage rate.	Infant mortality rate.	Rate of deaths without medical attendance.
Abra.....	68,852	1,633	2,559	484	420	1,637	24.85	37.78	14.29	164.12	97.27
Albay.....	268,769	11,868	12,448	2,858	2,623	(a)	44.21	46.31	21.26	209.65	98.00
Ambos Camarines.....	257,589	9,248	10,213	2,315	1,687	8,818	35.90	39.66	17.37	165.18	99.00
Antique.....	140,547	5,589	4,854	1,032	802	2,964	37.13	32.25	13.71	185.42	68.30
Bataan.....	48,724	3,412	2,015	804	817	2,964	69.82	41.35	16.50	410.82	96.24
Batanes.....	8,910	285	253	57	74	74	33.49	29.75	13.29	292.49	96.24
Batangas.....	360,821	14,371	15,396	3,862	4,273	13,641	39.86	42.70	15.87	284.63	90.41
Bohol.....	366,678	11,176	14,384	1,393	2,872	12,369	31.00	40.50	17.40	199.00	99.00
Bulacan.....	255,653	13,681	9,951	2,015	4,302	8,129	54.94	39.90	16.15	432.32	99.00
Cagayan.....	162,607	8,211	7,613	1,709	1,809	8,129	49.30	45.70	20.50	238.50	97.00
Capiz.....	227,659	8,986	9,961	2,385	1,151	8,577	39.85	46.06	20.54	185.40	87.30
Cavite.....	139,632	9,986	5,027	1,284	2,691	8,726	71.51	35.99	18.03	635.30	97.00
Cebu.....	928,963	22,858	32,169	6,122	6,120	20,850	24.30	35.30	13.00	190.20	98.00
Ilocos Norte.....	233,009	7,514	8,294	1,699	1,860	7,452	32.20	35.30	13.00	190.20	98.00
Ilocos Sur.....	233,557	6,798	7,789	1,602	1,884	6,510	29.20	33.34	13.71	235.53	97.07
Iloilo.....	465,307	19,689	19,945	3,542	4,158	18,510	42.31	46.08	21.15	222.82	98.00
Isabela.....	79,875	4,084	3,900	918	879	4,077	48.14	46.08	21.15	222.82	92.54
Laguna.....	165,217	11,599	8,412	1,612	3,309	10,734	72.56	52.62	19.60	384.21	86.00
La Union.....	139,898	5,766	6,697	1,175	1,366	5,733	41.21	47.72	17.60	203.92	93.40
Levite.....	600,076	19,483	19,330	5,467	4,898	18,510	32.30	32.04	18.12	233.96	95.00
Mindoro.....	5,551	2,314	1,973	411	601	2,153	41.29	35.51	14.72	304.61	93.40
Mountain Province.....	191,495	5,780	3,851	539	876	4,003	30.20	20.10	5.82	224.85	69.26
Nueva Ecija.....	138,089	8,946	6,853	1,890	2,289	8,451	64.78	48.77	27.37	331.67	95.00
Nueva Vizcaya.....	27,740	2,943	1,009	1,399	420	303	10.61	39.95	15.76	416.25	10.92
Occidental Negros.....	308,027	13,425	12,594	2,594	2,678	13,991	46.38	40.37	13.67	212.64	94.22
Oriental Negros.....	195,396	9,262	8,687	1,695	2,442	9,117	47.40	44.45	16.32	251.11	46.65
Palawan.....	33,197	1,239	1,117	254	118	921	37.32	33.64	15.30	105.64	82.45
Pampanga.....	228,654	13,567	11,772	2,301	4,337	11,755	59.33	51.48	10.06	368.41	99.00
Pangasinan.....	465,207	26,720	24,747	5,535	5,973	26,355	59.60	53.19	23.79	240.97	97.00
Rizal.....	157,029	14,584	7,449	1,850	4,139	10,270	93.86	41.94	11.90	555.64	70.00
Romblon.....	59,863	1,636	1,886	843	473	1,636	27.32	31.61	29.72	257.63	100.00
Samar.....	299,197	9,521	12,742	1,606	1,872	9,290	31.85	43.98	24.91	174.93	96.80
Sorsogon.....	193,899	7,342	8,373	1,619	1,884	6,875	37.56	43.23	15.89	233.06	93.64
Tarlac.....	181,120	7,050	6,855	1,397	2,053	6,190	41.89	40.73	15.59	219.63	87.80
Tayabas.....	258,003	11,295	10,944	2,570	3,026	9,442	43.80	42.50	19.56	276.24	83.59
Zambales.....	61,028	3,164	2,957	619	603	3,072	51.80	48.40	20.80	203.90	95.00
Total.....	8,008,618	334,903	324,969	68,097	81,835	267,764	42	40	18	252	96

* No record.

TABLE C-2.—Condensed report.

Province.	Estimated population.	Deaths.	Births.	Marriages.	Infant mortality under one year.	Deaths without medical attendance.	Death rate.	Birth rate.	Marriage rate.	Infant mortality rate.	Rate of deaths without medical attendance.
							Percent.	Percent.	Percent.	Percent.	Percent.
Abra.....	66,880	1,449	2,421	441	318	1,403	21.67	36.21	13.16	131.35	96.82
Albay.....	262,938	6,282	12,157	2,727	1,587	(a)	24.05	46.23	20.74	128.44	(a)
Ambos Camarines.....	253,262	4,666	8,993	1,655	1,221	4,582	18.42	35.50	13.05	135.77	98.00
Antique.....	139,186	3,373	4,734	1,225	3,373	24.33	24.33	34.15	17.67	137.09	100.00
Bataan.....	47,297	1,552	1,978	1,068	790	1,367	32.81	41.84	23.00	298.13	87.70
Batanes.....	8,668	218	297	45	76	25.14	25.14	34.26	10.29	249.30	
Batangas.....	351,552	7,610	16,573	3,178	3,158	7,132	21.64	47.14	18.07	18.28	98.71
Bohol.....	359,599	7,896	14,982	3,353	2,601	22.80	22.80	42.20	19.50	174.30	
Bulacan.....	251,637	6,307	10,323	2,238	2,466	5,823	25.00	41.00	18.00	238.88	92.32
Cagayan.....	160,845	5,355	7,017	1,766	1,478	5,277	34.60	44.60	22.70	210.60	75.60
Capiz.....	224,620	6,040	9,079	2,272	1,339	5,873	27.32	41.07	20.54	147.60	92.70
Cavite.....	138,393	4,846	6,087	1,185	1,870	4,457	35.03	43.98	17.12	319.69	98.00
Cebu.....	906,064	15,203	38,012	7,533	5,403	14,533	16.70	42.05	16.60	141.80	98.00
Ilocos Norte.....	230,869	5,804	7,944	1,691	1,336	5,032	25.50	34.20	14.60	168.10	97.80
Ilocos Sur.....	230,888	4,713	7,682	1,511	1,376	4,494	20.43	33.31	13.10	179.12	95.33
Iloilo.....	488,500	11,370	17,177	4,734	3,252	10,102	24.74	37.38	20.06	189.32	89.60
Isabela.....	78,912	3,013	3,696	826	765	2,272	36.79	45.10	19.37	191.45	75.00
Laguna.....	161,871	5,286	8,632	1,723	2,063	4,892	32.36	53.55	15.09	234.93	94.43
La Union.....	136,823	3,110	6,635	1,236	1,036	3,074	28.80	49.03	20.34	154.97	98.00
Leyte.....	590,008	12,316	22,334	5,972	3,231	21.30	21.30	88.70	20.65	145.69	
Mindoro.....	55,097	1,602	2,056	555	438	29.07	29.07	37.35	20.18	213.30	
Mountain Province.....	190,827	2,889	3,587	666	494	1,279	15.13	18.69	6.98	238.19	35.37
Nueva Ecija.....	135,846	4,788	7,031	1,829	1,599	3,784	35.27	51.80	25.92	227.42	81.00
Nueva Vizcaya.....	27,416	877	1,201	254	254	123	32.26	44.18	12.72	211.48	14.38
Occidental Negros.....	306,628	10,780	12,179	3,166	2,406	10,546	35.40	39.71	20.62	197.55	87.95
Oriental Negros.....	190,996	5,714	10,114	1,995	1,674	5,511	29.91	52.95	20.99	165.51	28.58
Palawan.....	32,517	486	1,166	947	73	311	14.94	35.13	21.84	62.60	63.99
Pampanga.....	230,449	6,884	11,439	2,254	3,004	6,286	29.86	49.63	19.66	262.61	91.81
Pangasinan.....	453,580	12,649	24,278	6,118	4,416	12,453	27.89	63.52	22.66	186.17	98.40
Rizal.....	154,172	5,352	8,209	2,003	2,141	3,904	34.43	63.82	13.14	262.02	72.00
Romblon.....	59,002	1,050	1,911	687	306	1,060	17.79	32.39	23.29	161.17	100.00
Samar.....	296,521	7,940	11,616	1,985	1,590	6,770	26.90	42.24	14.91	136.54	85.60
Sorsogon.....	191,279	5,125	7,755	1,725	1,281	5,110	26.64	40.54	18.04	165.70	99.70
Tarlac.....	178,047	4,500	7,573	1,310	1,732	4,346	25.25	42.70	14.76	228.18	96.58
Taybas.....	254,550	6,181	9,634	2,637	2,044	6,054	28.60	37.68	20.62	212.16	81.97
Zambales.....	59,670	1,559	1,559	2,917	446	446	26.24	26.00	47.80	20.16	152.10
Total.....	7,875,164	194,685	328,139	75,927	59,712	150,659	25	47	19	182.00	98

* No record.

TABLE C-3.—*Condensed report.*

Province.	Estimated population.	1916									
		Deaths.	Births.	Marriages.	Infant mortality under one year.	Deaths without medical attendance.	Death rate.	Birth rate.	Marriage rate.	Infant mortality rate.	Rate of deaths without medical attendance.
							Per cent.	Per cent.	Per cent.	Per cent.	Per cent.
Abra.....	65,878	1,327	2,329	354	243	1,325	20.14	35.34	10.89	104.33	99.35
Albay.....	259,242	8,031	11,727	2,449	2,155	(a)	30.90	45.42	18.89	183.76	(a)
Amor Camarines.....	251,868	6,801	8,196	897	1,385	6,606	27.00	32.53	7.12	169.00	94.47
Antique.....	136,472	2,161	4,875	1,065	535	2,161	15.84	35.72	15.60	105.23	100.00
Bataan.....	47,231	1,852	1,918	1,908	540	1,644	39.42	40.60	19.22	281.53	97.60
Batanes.....	8,258	54	54	74	74		13.90	24.26	13.01	250.30	
Batangas.....	344,918	7,277	14,817	2,830	2,639	6,988	21.15	43.07	16.43	178.78	96.02
Bohol.....	349,325	4,964	15,238	2,881	1,898		14.70	44.40	16.50	125.80	
Bulacan.....	248,649	7,420	10,408	2,133	2,235	6,490	29.59	41.86	17.15	216.75	87.46
Cagayan.....	157,547	3,647	6,945	1,339	1,104	3,614	23.50	44.20	17.60	159.20	29.00
Capiz.....	221,022	4,534	8,132	1,731	1,165	4,319	20.51	36.79	15.66	143.25	95.00
Cavite.....	138,205	5,420	5,608	1,083	1,925	4,502	39.07	40.57	15.67	343.25	83.06
Cebu.....	884,213	12,309	34,160	8,020	4,087	1,136	12.90	38.66	18.14	120.40	97.00
Ilocos Norte.....	227,113	4,416	8,172	1,359	1,124	3,249	19.40	35.90	11.90	137.90	75.82
Ilocos Sur.....	226,952	4,085	7,722	1,417	1,196	3,961	17.99	34.02	12.48	154.62	96.96
Iloilo.....	451,782	11,277	18,995	3,343	2,517	10,448	24.98	42.04	14.78	132.52	89.70
Isabela.....	77,178	1,929	3,663	767	505	1,115	26.02	47.40	18.90	138.17	98.50
Laguna.....	159,717	5,932	8,086	1,829	2,091	5,438	37.14	56.27	22.90	255.37	91.65
La Union.....	132,230	2,440	6,533	1,269	731	2,424	18.45	49.40	19.18	111.89	99.00
Levite.....	579,995	10,999	21,012	5,362	3,360		18.97	36.23	24.02	162.63	
Mindoro.....	54,520	1,502	2,079	480	452		25.11	38.13	17.60	217.40	
Mountain Province.....	130,500	2,298	2,625	598	382	134	12.05	13.78	6.27	146.60	5.83
Nueva Ecija.....	132,999	4,096	6,943	1,533	1,415	3,826	29.95	48.18	20.04	203.91	95.00
Nueva Vizcaya.....	26,864	844	1,396	1,972	203	70	31.42	51.96	12.80	145.41	8.20
Occidental Negros.....	304,688	10,003	11,963	2,978	2,187	9,777	32.77	39.19	19.51	182.00	97.74
Oriental Negros.....	134,889	3,820	10,027	2,776	1,315	3,894	21.20	54.43	30.02	131.17	21.06
Palawan.....	31,995	364	886	277	70	263	11.68	27.72	17.30	79.00	69.51
Panganga.....	225,113	7,157	12,487	2,931	2,935	6,527	31.76	55.45	18.04	235.04	91.27
Pangasinan.....	441,816	12,807	24,771	3,796	4,040	12,095	28.08	54.26	17.18	167.83	98.20
Rizal.....	152,508	6,589	8,253	1,855	2,123	4,632	42.41	54.78	12.81	257.23	72.00
Romblon.....	58,255	1,111	1,858	494	214	1,111	19.07	31.89	16.96	115.17	100.00
Samar.....	291,727	6,090	9,884	1,775	1,172	6,090	28.70	33.80	24.34	118.66	100.00
Sorsogon.....	190,548	4,822	8,553	1,433	1,433	3,399	25.30	29.19	9.99	258.06	70.48
Tarlac.....	173,758	3,770	8,059	1,252	1,483	3,649	21.70	46.49	14.54	184.01	96.76
Tayabas.....	251,710	6,552	9,392	2,302	2,029	5,531	26.06	37.35	18.31	216.03	84.40
Zambales.....	59,045	1,888	2,513	596	468		32.02	42.50	20.18	181.85	
Total.....	7,738,740	180,384	316,808	65,857	53,420	126,127	30	41	17	168	96

No record.

* No record.

The weekly report prepared last year, of which a description was given on pages 83 and 84 of the report for 1918, was not understood very well by several district health officers and the following circular was issued as explanatory of this matter:

PHILIPPINE HEALTH SERVICE.

MANILA, *February 13, 1919.*

CIRCULAR }
R. 21. }

To all district health officers:

In order to avoid the confusion incurred by some district health officers in the writing of weekly reports required in Circular Q-84, dated December 12, 1918, the following explanations are given:

1. The statistical tabulations required are three, as follows:

Table (A). General mortality.

Table (B). Mortality from most common diseases.

Table (C). Mortality from communicable diseases.

2. In Table (A) shall be registered two data.

(a) Total deaths under 1 year. Under this heading shall be noted the total number of deaths from all causes registered, but only under the one year age group.

(b) Total deaths from all causes and in all age groups.

3. Table (B).

In this table shall be included only the number of cases and deaths registered by the most common diagnoses used.

4. Table (C).

In this table shall be included only the number of cases and deaths registered by communicable diseases, without classification as to ages.

5. It should be noted that the total number of deaths registered in Table (A) may be more than the sum of the number of deaths registered by the most common diagnoses used, plus the number of deaths registered by communicable diseases, because in the most common diagnoses used, the ordinary causes of death, such as senile debility, nephritis, puerperal state, diseases of the heart, etc., are not included.

6. Each week of 1919 shall always be compared with the corresponding week of 1918; e. g., for the month of January the weeks ending on the 4th, 11th, 18th, and 25th.

More care in the preparation of weekly reports is requested for the good of the service.

VICENTE JESUS,

Acting Director of Health.

But as it was observed that many of the health officers sent the weekly report in an automatic manner without any criticism or scientific accuracy of the data reported, the following circular was issued which is self-explanatory:

PHILIPPINE HEALTH SERVICE.

MANILA, *March 25, 1920.*

CIRCULAR }
R. 37. }

To all district health officers:

Circulars Q-84 and R-21 were issued with a view to securing exact and uniform morbidity and mortality statistical for use as a sort of baro-

meter with which changes in public health in each district might be gauged. A good many of those concerned have, however, failed so far to clearly understand the end in view, and for their guidance the following further instructions are given:

1. An increase, either in total mortality, or in mortality under one year during a given week of the current year as compared with a corresponding period of 1918, should be sufficient cause for alarm and the district health officer should immediately investigate or cause to be investigated the cause thereof, and should not rest contented until he is sure that such an increase is not caused by a dangerous communicable disease.

2. With the aid of the death certificate, the residence of those dying from dangerous communicable diseases may and should be located. An inspection thereof may result in the discovery of other living cases of the disease upon whom such sanitary measures as would prevent the inception of an epidemic should be applied.

3. Infantile convulsions and simple meningitis are but symptoms of other diseases and are often times, specially among children, the expression of toxæmic conditions accompanying dangerous communicable diseases. Increase in number of deaths from the above causes is generally followed up by epidemics of smallpox, cholera, dysentery, etc. A high mortality rate from these conditions should immediately be investigated, more so when death occurs after only an illness of five to seven days duration, for an epidemic may have already started.

4. The measures taken to control epidemics or outbreaks endangering the district should be stated under "Inspections." Explanatory remarks regarding increases in total mortality, or in mortality under one year should be noted under "Miscellaneous."

The present circular is being issued inasmuch as it has been observed that not a few are submitting their weekly reports in a careless way, without proper study and lacking in scientific accuracy. The weekly report, as has been stated, should serve as a barometer, as a gauge of the changes in public health, a timely use of the returns of which will enable the health officer to hang his storm signals of the approach of danger on one hand, and on the other, will serve him as an automatic detector of the mortality rate and general health situation within his district. In other words, the data gleaned therefrom should be used both for purposes of contagion eradication and for the reduction of the general mortality rate. In either event, it will place the health officer in a position to prove his worth, to keep faith with himself and his duties and to further the interests of the service, the good name of which he is bound to uphold.

In this connection, it is only proper to state that compliance with circulars is not a mere machine-like process, for it is an acid test of the efficiency, scientific equipment and capacity for initiative and responsibility of a public health official, and the day has come, now that the service is entirely entrusted in our hands when every health officer must show and prove his qualifications as such.

(Sgd.) V. JESUS,
Acting Director of Health.

More care was taken by the health officers after the last above circular was issued but it is regretted to state that only fairly good results have yet been attained.

General statistics.—Tables C, C-1, C-2, and C-3 show the population, natality, marriages and mortality rates by provinces. The population for 1919 has been calculated by the same procedure as followed last year; that is to say, estimating the natural increase of population based on the number of births and deaths reported.

The death rate in 1919 was, with little difference, the same as in 1918. The high death rate registered in 1918 was due to the influenza epidemic and the smallpox epidemic, while in 1919 the epidemics of cholera, bacillary dysentery and smallpox also maintained the mortality at a high rate which is estimated at 36.55 per 1,000.

The population of this division had a loss of 9,934 in population in 1918 due to the smallpox and influenza epidemics and in the year 1919 the loss was 19,464 due to the smallpox, cholera and dysentery epidemics.

The marriage rate was the same as in 1918, but the birth rate in 1919 was less than that registered in 1918. This might be due to the fact that many births registered in the last quarter of the year 1919 had not yet been reported at the time of submitting the annual reports by the district health officers to the Central Office, or better, to the fact that natality was reduced in 1919 on the ground of the epidemics registered.

Deaths without medical attendance.—If the number of sanitary personnel employed in the provinces of this division which has already been tabulated in Table A of this report were compared, the high percentage of death without medical attendance would be astonishing, but this matter should be considered under two aspects:

The first is that such percentage is believed to be erroneous. The error is due to the practice followed by private practitioners in not issuing death certificates unless the deceased was attended by them to the last day before death, the enforcement of the provisions of section 1087 of the Revised Administrative Code no longer being required by the proper authorities. From this practice, a patient attended by a physician some time before death, is recorded as having died without medical attendance.

The second aspect is social and material. The difficulties of transportation are such that the doctor cannot go to the remote barrios to attend the poor as well as the rich patients. Furthermore, the simple people have a tendency to conceal patients, especially those suffering from communicable diseases. These simple people lack confidence in scientific treatment and many of them appeal to the neighbors' counsels and resort to house-

hold remedies, if not to *herbolarios* who, by the way, happily no longer abound in the provinces, instead of getting doctors, and if such patients die, they are included with deaths without medical attendance.

It has been stated that in accordance with the medical personnel assigned to this division one doctor could only be assigned to every 34,435 population. This population is distributed into sanitary divisions, composed of three or four towns, which are sometimes more than twenty kilometers apart. Under this condition it is impossible to render medical services to all the people that need it, therefore many of them die without medical attendance. One of the remedies to correct this anomaly might be the extension of the free services of the public dispensaries in towns and large and small barrios; but this arrangement is still impossible not only because of the small number of doctors employed in the service but also because of the small funds appropriated as contributions to the health fund of the provinces, either by municipal or provincial organizations, or both.

Mortality by age groups—infant mortality.—A look at Tables C, C-1, C-2, and C-3, as well as at Tables D, D-1, D-2, D-3, and E, shows that the mortality from zero to under 30 days remained practically at the same rate, because, though in 1918 a slight increase was noted, this undoubtedly was due to the influenza epidemic, but the same cannot be said with regard to the infant mortality rate which has increased every year in most of the provinces of this division. However, the grand total infant mortality rate for 1919 is less than that for 1918.

In other countries it has been observed that the infant mortality rate follows the rate for a given disease, especially diarrhea and enteritis, but in this country this similarity cannot be established.

This may be due to the fact that in this country there are not only one but many and very variable factors which contribute to keep this mortality at a high rate.

All the district health officers confirm the evidence that improper care and improper feeding of infants are the principal factors which maintain the infant mortality rate so high.

On careful examination of weekly reports, it is observed that it seems that convulsions, congenital debility, beriberi, and disturbances of the digestive system are the causes which kill a large number of children, but after a closer and more careful examination, it can be stated with certainty that the great majority of deaths in infants is due to diseases which are caused by improper both pre-natal and post-natal care of babies.

TABLE D-1.—Deaths according to age groups.

Province.	Under 30 days.	1918											Age not stated.	Total.			
		30 days to under 1 year.	1 year to under 2 years.	2 years to 4 years.	5 years to 9 years.	10 years to 14 years.	15 years to 19 years.	20 years to 29 years.	30 years to 39 years.	40 years to 49 years.	50 years to 59 years.	60 years to 69 years.			70 years to 79 years.	80 years to 89 years.	90 years to 99 years.	100 years and over.
Abra	147	273	123	156	86	39	78	162	139	120	91	88	66	51	37	5	1,683
Albay	911	1,712	1,047	2,026	1,128	354	431	686	750	767	552	458	359	326	226	100	11,868
Ambos Camarines	597	1,090	827	1,082	1,141	631	441	528	645	603	344	402	292	194	136	177	5,248
Antique	271	631	642	981	506	147	146	400	386	230	213	200	180	139	60	17	5,585
Bataan	261	556	357	491	423	128	149	153	180	226	155	115	74	65	36	27	3,412
Batanes	48	28	12	23	23	9	3	15	26	23	12	24	26	12	1		285
Batangas	1,668	2,605	1,285	1,453	1,033	399	421	573	728	1,113	809	646	562	421	290	226	14,371
Bohol	1,074	1,798	1,861	1,224	1,154	424	435	975	706	570	414	503	436	313	155	91	11,176
Bulacan	1,319	2,953	1,198	1,711	1,100	270	434	1,123	983	746	509	391	349	344	213	57	13,681
Cagayan	790	1,019	788	1,094	1,201	293	325	705	594	550	423	353	288	174	74	53	8,211
Capiz	739	412	940	910	944	645	585	462	706	435	569	482	507	306	92	74	8,809
Cavite	782	1,909	946	1,459	1,137	200	245	485	482	663	509	442	252	216	131	61	9,986
Cebu	1,640	4,480	2,294	2,543	2,086	690	815	888	830	1,367	1,119	1,039	994	726	635	385	22,858
Iloocos Norte	583	1,283	723	1,018	582	228	277	514	507	444	329	354	306	244	98	46	7,514
Iloocos Sur	715	1,117	1,940	2,780	2,019	531	546	1,786	1,251	1,175	965	883	604	507	288	159	8
Islaeta	305	574	383	438	333	135	172	200	237	375	319	224	192	106	53	23	5,084
Laguna	1,081	2,278	1,132	1,384	978	283	357	985	893	670	518	443	283	176	113	45	11,599
La Union	509	857	603	877	568	153	204	389	344	284	199	180	182	166	144	78	5,766
Leyte	419	4,479	1,769	2,390	2,366	956	1,014	1,251	983	972	873	675	527	352	296	134	19,488
Mindoro	271	330	205	204	123	133	136	207	205	186	96	78	55	50	15	13	2,314
Mountain Province	325	551	623	759	459	452	512	136	513	409	212	250	176	148	121	16	5,780
Nueva Ecija	919	1,370	773	1,024	739	240	413	539	565	759	596	338	250	171	132	93	8,946
Nueva Vizcaya	120	300	163	286	243	161	219	452	334	284	170	94	60	35	18	5	2,943
Occidental Negros	983	1,745	1,433	2,281	1,552	416	624	383	978	846	647	605	349	322	164	109	13,425
Oriental Negros	600	1,842	966	1,082	681	197	326	882	754	564	455	395	241	185	88	49	9,262
Palawan	39	79	91	171	103	64	66	211	127	85	77	47	36	22	11	2	1,239
Pampanga	1,636	2,701	1,001	1,762	1,020	427	529	671	967	967	652	462	486	320	264	182	13,567
Pangasinan	2,589	3,384	2,820	4,010	2,739	823	1,048	2,233	1,831	1,476	1,001	927	827	482	295	207	26,720
Rizal	1,109	3,030	1,720	2,326	1,556	365	342	796	738	1,176	434	377	321	304	203	74	14,584
Romblon	119	354	173	216	116	34	53	69	96	116	89	90	54	34	16	7	1,636
Samar	324	1,548	964	988	998	516	521	545	633	502	376	504	343	225	157	72	9,521
Sorsogon	576	1,308	559	777	608	371	297	333	376	460	303	373	303	218	177	177	7,942
Tarlac	865	1,188	846	882	592	194	264	665	546	410	260	203	146	115	70	70	7,050
Tayabas	1,125	1,901	902	1,017	905	344	467	1,289	923	726	535	478	303	194	106	71	11,295
Zambales	275	328	355	507	378	78	106	1,254	227	204	143	103	71	53	28	34	3,164
Total	27,105	54,730	31,787	43,049	31,934	11,511	13,134	22,133	21,204	20,359	15,629	13,474	10,759	8,027	5,130	2,949	334,903

TABLE D-2.—Deaths according to age groups.

1917

Province.	Under 30 days.	30 days to under 1 year.	1 year to under 2 years.	2 years to 4 years.	4 years to 9 years.	9 years to 14 years.	14 years to 19 years.	19 years to 29 years.	29 years to 39 years.	39 years to 49 years.	49 years to 59 years.	59 years to 69 years.	69 years to 79 years.	79 years to 89 years.	89 years to 99 years.	99 years and over.	Age not stated.	Total.
Abra.....	118	200	162	221	152	29	33	73	65	81	82	64	76	51	33	8	1	1,449
Albay.....	719	868	549	768	379	157	180	555	439	369	391	344	260	220	138	66	1	6,282
Ambo Camarines.....	528	693	416	455	247	160	211	221	261	299	292	204	243	170	138	67	4	4,666
Antique.....	220	429	354	501	353	94	87	276	207	179	169	185	142	114	68	13	2	3,372
Bataan.....	250	340	132	155	56	20	40	101	160	54	75	73	49	36	28	3	1	1,552
Batanes.....	50	26	10	5	6	1	4	11	7	14	12	32	31	8	1			218
Batangas.....	1,494	1,654	611	788	339	132	177	176	284	415	351	331	320	240	166	135	36	7,610
Bohol.....	981	1,620	622	622	463	267	247	640	474	372	325	415	348	389	122	53	36	7,896
Bulacan.....	945	1,521	430	465	244	106	177	359	364	409	354	309	229	201	134	25	5	6,307
Cagayan.....	679	799	643	837	501	118	133	249	241	275	234	217	189	186	64	33	5	5,355
Capiz.....	473	866	688	673	604	183	170	357	396	401	275	321	269	195	116	64	10	6,040
Cavite.....	542	1,328	429	580	215	137	150	133	253	222	199	183	157	126	59	25	18	4,846
Cebu.....	1,343	3,455	1,538	1,120	735	469	455	628	672	840	783	681	692	439	353	198	107	15,203
Ilocos Norte.....	462	874	750	1,045	624	154	162	176	236	240	217	218	227	177	106	27	5	5,504
Ilocos Sur.....	617	759	596	692	243	92	104	188	235	229	185	218	227	197	109		22	4,713
Iloilo.....	1,035	2,217	1,367	1,302	1,005	675	416	631	518	520	486	434	359	176	140	61	28	11,370
Isabela.....	287	478	411	463	306	99	85	85	96	162	143	117	125	85	44	21	6	3,013
Laguna.....	912	1,151	357	452	223	80	134	310	302	303	306	308	181	105	57	34	41	5,266
La Union.....	387	649	360	309	163	70	89	162	183	152	119	132	138	106	58	28	5	3,110
Leyte.....	875	2,356	1,204	1,217	1,077	486	480	864	864	722	629	549	313	309	218	98	25	12,316
Mindoro.....	149	289	196	168	92	38	63	155	110	96	90	60	34	26	15	4	19	1,602
Mountain Province.....	214	280	328	347	159	228	205	184	259	206	102	150	78	63	38	10	28	2,889
Nueva Ecija.....	614	985	629	405	293	107	114	279	212	293	154	168	141	110	90	50	4	4,788
Nueva Vizcaya.....	127	127	61	57	53	21	42	29	73	62	46	52	25	24	17	9	2	877
Oriental Negros.....	835	1,571	1,258	1,794	1,069	213	335	772	770	609	440	429	269	226	111	77	2	10,560
Occidental Negros.....	533	1,141	570	525	440	141	176	494	420	314	305	282	154	127	49	29	2	5,761
Palawan.....	38	35	42	50	29	18	21	34	35	38	36	46	38	18	6	1	1	486
Pampanga.....	1,157	1,847	651	584	265	87	139	146	172	369	341	320	300	211	204	121	10	6,884
Pangasinan.....	2,296	2,120	1,079	1,296	690	252	352	723	720	732	540	584	496	349	182	169	9	12,649
Rizal.....	868	1,273	422	413	235	74	97	296	297	297	270	251	162	188	115	57	37	5,352
Romblon.....	103	202	105	95	30	12	30	110	53	56	66	61	31	25	17	4	1	1,050
Samar.....	508	688	763	763	666	377	329	299	288	492	444	342	319	199	145	45	23	7,940
Sorsogon.....	512	729	471	482	258	305	214	303	281	327	313	271	192	164	104	69	70	5,125
Tarlac.....	762	1,020	550	557	224	82	81	242	196	205	155	149	109	113	56	44	3	4,500
Tayabas.....	749	1,295	506	480	291	163	214	503	414	388	323	315	201	164	61	43	6	6,181
Zambales.....	271	475	165	207	88	26	38	111	114	111	83	55	58	33	22	22	1	1,559
Total.....	23,248	36,464	19,350	20,833	12,867	5,681	5,989	11,030	10,713	10,834	9,265	8,857	7,219	5,560	3,454	1,713	572	194,685

TABLE D-3.—Deaths according to age groups.

Province.	1916																Total.	
	Under 30 days.	30 days. to under 1 year.	1 year to under 2 years.	2 years to 4 years.	5 years to 9 years.	10 years to 24 years.	15 years to 19 years.	20 years to 29 years.	30 years to 39 years.	40 years to 49 years.	50 years to 59 years.	60 years to 69 years.	70 years to 79 years.	80 years to 89 years.	90 years to 99 years.	100 years and over.		Age not stated.
Abra	78	165	127	190	135	37	39	84	67	92	74	83	65	53	17	20	1	1,327
Albay	736	1,419	803	989	472	230	282	674	470	414	400	381	314	243	132	59	13	8,031
Ambos Camarines	486	899	576	830	439	422	438	387	359	449	423	305	339	165	157	72	56	6,801
Antique	214	321	174	227	134	66	73	167	150	147	118	125	105	70	50	16	4	2,161
Bataan	244	296	186	191	184	27	38	144	140	132	71	70	50	35	20	13	1	1,852
Batanes	38	36	35	30	20	10	10	15	10	10	9	14	15	4				2,777
Batangas	1,253	1,386	575	743	356	149	202	243	293	414	380	327	357	259	204	132		7,277
Bohol	904	994	321	279	105	105	169	398	303	240	206	253	244	160	99	46	41	4,964
Bulacan	996	1,299	646	880	431	160	236	546	451	444	377	330	242	206	147	76	6	7,420
Cagayan	574	530	362	341	171	71	100	257	239	255	227	199	138	82	51	20	30	3,647
Capiz	465	700	318	364	330	131	162	375	338	338	264	275	201	151	71	37	14	4,534
Cavite	843	1,082	522	644	300	112	108	267	253	298	250	254	201	146	105	32	3	5,420
Cebu	1,611	2,476	1,331	1,028	577	426	510	501	528	610	593	549	586	412	302	175	93	12,309
Cebu Norte	481	512	636	570	325	87	71	189	208	195	186	207	194	153	61	26	9	4,085
Ilocos Sur	628	568	499	570	236	87	555	559	614	405	671	541	460	309	244	131	72	11,277
Iloilo	1,117	1,400	1,109	1,482	1,142	456	70	87	82	125	128	113	87	57	26	23	9	1,929
Isabela	219	293	209	233	99	109	164	44	355	372	307	303	150	130	69	37	13	5,982
Laguna	768	1,303	530	606	252	109	87	137	171	141	119	124	105	87	45	17	5	2,440
La Union	313	418	242	237	140	69	371	240	644	536	461	454	333	230	115	80	11	10,999
Leyte	905	2,455	1,179	1,178	821	286	82	174	190	107	85	77	40	14	11	11	10	1,502
Mindoro	149	303	116	111	87	25	119	165	161	119	97	88	120	50	26	16	5	2,298
Mountain Province	170	212	231	322	127	280	149	248	221	218	196	177	129	87	66	73	11	4,096
Nueva Ecija	628	787	417	401	206	82	38	84	39	55	52	51	33	21	16	11	2	844
Nueva Vizcaya	71	132	61	68	75	33	40	84	39	55	52	51	33	21	16	11	2	844
Occidental Negros	982	1,205	930	1,556	843	266	387	790	645	696	503	401	295	228	149	71	56	10,003
Oriental	569	746	421	284	195	81	165	302	316	227	197	184	111	82	21	23	2	3,920
Palawan	32	38	33	32	17	11	13	23	20	25	28	26	29	25	7		5	364
Pampanga	1,262	1,673	629	630	368	89	157	152	228	397	357	293	317	214	134	84	67	7,151
Pangasinan	2,131	1,909	1,195	1,284	698	263	454	764	729	723	514	505	443	357	178	156	4	12,307
Rizal	758	1,365	677	725	360	135	124	406	358	507	244	262	250	167	137	57	57	6,589
Romblon	98	116	91	99	75	43	74	102	92	100	64	62	43	27	15	6	4	1,111
Samar	524	648	498	570	445	244	346	373	346	321	313	495	224	184	159	206	194	6,090
Sorsogon	601	832	536	587	313	200	168	282	229	242	194	169	157	141	71	70	30	4,822
Tarlac	641	842	432	357	163	82	93	210	215	193	150	110	95	86	49	49	3	3,770
Tayabas	705	1,324	599	708	346	137	257	243	278	415	399	303	329	210	146	91	62	6,552
Zambales	221	237	218	242	148	41	72	137	135	137	89	79	59	32	22	17	1	1,888
Total	22,368	31,052	17,300	19,684	11,292	5,108	6,582	9,995	9,958	10,305	8,946	8,443	7,095	4,986	3,257	1,988	897	180,384

TABLE E.—Comparative infant mortality.

Province.	1919					1918					1917				
	From 0 to one year.	1 year to 2 years.	2 years to 4 years.	Total.	Rate com- pared with total mor- tality.	From 0 to one year.	1 year to 2 years.	2 years to 4 years.	Total.	Rate com- pared with total mor- tality.	From 0 to one year.	1 year to 2 years.	2 years to 4 years.	Total.	Rate com- pared with total mor- tality.
					Percent.					Percent.					Percent.
Abra.....	323	121	113	557	37.94	420	123	156	699	41.53	318	162	221	701	48.87
Albay.....	2,526	1,212	1,671	5,409	43.61	2,623	1,047	2,026	5,696	47.93	1,589	549	708	2,844	44.95
Ambos Camarines.....	1,436	1,180	1,001	3,617	38.55	1,687	827	1,082	3,596	38.88	1,221	416	455	2,062	44.61
Antique.....	864	862	1,200	2,926	53.94	902	642	981	2,505	45.29	649	354	501	1,504	44.72
Bataan.....	741	291	391	1,423	54.73	817	357	491	1,665	48.69	590	132	155	877	56.69
Batanes.....	24	5	12	41	27.00	74	12	23	109	38.41	10	11	5	91	46.10
Batangas.....	3,073	1,013	1,586	5,672	47.45	4,273	1,285	1,453	7,011	47.32	3,158	611	788	4,557	59.80
Bohol.....	1,329	1,329	1,739	5,850	50.90	2,872	861	1,224	4,957	43.80	2,601	622	622	3,845	48.78
Bulacan.....	2,536	728	951	4,215	43.26	4,302	1,198	1,711	7,211	52.84	2,466	430	465	3,361	53.23
Cagayan.....	1,429	462	659	2,559	46.00	1,809	788	1,094	3,691	45.00	1,478	643	837	2,958	55.00
Capiz.....	1,321	872	922	3,150	41.87	1,151	940	910	3,001	23.26	1,339	658	673	2,617	29.26
Cebu.....	1,682	596	776	3,058	54.17	2,691	946	1,459	4,990	50.47	1,370	429	580	2,377	60.55
Ilocos Norte.....	1,795	431	5,826	16,656	51.00	6,120	2,940	2,543	10,957	48.40	5,403	1,538	1,045	8,061	53.20
Ilocos Sur.....	1,673	788	1,557	4,316	49.92	1,866	723	1,018	3,607	48.00	1,336	750	1,045	3,131	53.90
Iloilo.....	3,419	2,098	3,122	9,239	46.63	4,158	601	1,817	3,252	47.85	1,376	596	692	2,664	55.25
Iloilo Sur.....	2,455	247	334	1,336	48.90	4,158	1,940	2,780	8,884	45.09	3,282	1,367	1,302	5,931	46.52
Isabela.....	655	632	818	3,096	48.00	879	1,383	1,438	1,100	41.38	765	411	463	1,639	54.40
Laguna.....	2,992	399	674	3,965	43.30	3,309	1,132	1,384	5,228	50.00	2,063	387	452	2,902	54.00
Leyte.....	4,197	2,008	2,656	8,861	55.12	4,898	1,603	2,877	2,846	40.90	1,036	360	306	1,705	54.64
Mindoro.....	338	186	237	761	31.60	601	205	204	9,057	46.48	1,036	1,204	1,217	5,652	45.89
Mountain Province.....	578	399	336	1,313	31.60	876	623	759	2,258	43.60	438	196	168	802	50.08
Nueva Ecija.....	2,120	1,077	1,410	4,607	50.70	2,289	773	1,264	4,086	45.00	1,599	629	491	2,633	56.00
Nueva Vizcaya.....	283	103	147	533	46.00	420	163	286	869	29.00	254	61	57	372	42.00
Occidental Negros.....	2,907	1,239	2,518	5,764	44.00	2,678	1,433	3,281	6,392	47.61	2,406	1,258	1,794	5,458	50.64
Oriental Negros.....	2,078	1,060	1,292	4,430	45.17	2,442	966	1,032	4,440	47.94	1,674	570	525	2,769	48.46
Palawan.....	97	66	72	235	30.79	118	91	171	380	30.67	73	42	50	165	31.87
Pampanga.....	3,080	897	1,123	5,100	51.50	4,337	1,001	1,762	7,100	52.40	3,004	651	584	4,239	61.60
Pangasinan.....	5,789	2,287	4,844	12,920	50.38	3,973	2,820	4,010	12,811	47.94	4,416	1,979	1,296	6,791	53.68
Rizal.....	1,964	585	806	3,354	45.00	4,139	1,720	2,326	8,185	56.00	2,141	422	413	2,976	55.00
Romblon.....	375	199	237	811	56.36	1,472	173	216	862	51.93	305	105	95	505	48.09
Samar.....	2,452	1,175	1,413	5,040	43.00	3,773	964	938	3,774	39.00	1,590	688	763	3,041	38.00
Sorsogon.....	2,055	994	1,452	4,501	40.70	1,884	559	777	3,220	45.64	1,281	471	482	2,234	43.59
Tarlac.....	1,777	635	829	3,241	54.00	2,053	568	882	3,503	51.00	1,732	506	557	2,839	63.00
Tayabas.....	2,479	881	782	4,142	36.63	3,026	902	1,017	4,945	43.80	2,044	506	480	3,030	48.60
Zambales.....	2,489	286	400	1,175	50.00	3,603	355	507	1,465	46.00	2,446	165	207	818	52.00
Total.....	68,330	32,267	45,141	145,738	48	81,885	31,787	43,049	156,671	47	59,712	19,350	20,833	99,895	39

Infant mortality in the Philippines is no doubt one of our most difficult problems to solve and its solution is perhaps a work of not only one or more years, but one or two generations. For the present, not much success can be attained in this matter while the personnel of the service detailed in the provinces remains insufficient, not only in number, but also in preparation, for the undertaking of such a campaign. For the purpose of bringing the full force of the importance of the infant mortality campaign to the attention of those interested in the problem of infant mortality, the following significant quotation, attributed to Dr. Davis, a very well-known sanitarian, is quoted: "A high infant mortality rate today is a greater disgrace than a high typhoid rate. It reflects on clergy, physicians, nurses, school-teachers and editors alike and gives a low rating for the intelligence of the people. Mothers should be taught how to care for their children."*

Mortality from 1 to 4 years.—The increased mortality of children between one to four years of age was chiefly due to smallpox and partly to cholera.

Mortality under five years.—The deaths registered under the age groups comprised from 5 to 14 years, inclusive, were more in 1919 than in 1918 which was due to the toll paid by this group of ages in 1919 to smallpox and dysentery. The deaths registered under the age groups from 15 to 49 years were larger in 1918 than in 1919 due to the influenza epidemic in 1918. The remainder of the age groups registered practically the same number of deaths in 1918 as in 1919. From this fact it may be concluded that smallpox, dysentery and perhaps cholera have caused more victims in the lower ages of life than those in the over 20 years age group.

Mortality by the most common diagnoses used.—In Tables F, F-1, F-2, and F-3, has been tabulated the number of deaths attributed to the most common diagnoses used by our health officers.

If it is remembered that over 90 per cent of all deaths occur without medical attendance, and hence the duty of making the diagnoses and issuing death certificates devolves upon the health officers, or, in their absence, upon the sanitary inspector, or upon the president, the secretary or councilor of the municipality, and that the latter have not sufficient knowledge to accurately diagnose the cause of death, it should not be a matter of surprise

* The word "typhoid" could perhaps be substituted by "cholera" or "dysentery" if it is desired to apply the statement of Dr. Davis to this country.

that in this country there is registered such a large number of deaths attributed to "convulsions," "congenital debility," and "simple meningitis," and that in the Philippines such diseases constitute real epidemics.

With reference to the very frequent use of the term, *cause of death*, the reader is referred to the statement made with reference to this matter on pages 98 and 99 of the annual report of this Service for 1918.

Considerable efforts were continued during the year towards the dissuade of this kind of diagnosis but very little success has been attained. A circular was in preparation in regard to this matter, but it was not possible to issue it during the year.

Beriberi.—The distinction between beriberi in adults and beriberi in infants was directed to be made by the district health officers in the report for 1919 but only 25 of the 36 health districts embraced by this Division have made such distinction.

In the provinces in which said distinctions were not made it appears that deaths attributed to beriberi occurred, speaking in general, more in infants than in adults as should naturally be expected.

Some provinces, among which are mentioned the provinces of Nueva Ecija, Samar, and Oriental Negros, reported such a large number of deaths attributed to beriberi that it is impossible to accept such data as accurate, and it should be remembered that such diagnoses were not made by technical personnel.

Diarrhœa and enteritis.—The number of deaths attributed to these diseases was reported separately in two groups: First, among those under two years of age; second, among those over two years of age.

Both groups have registered more deaths in the year 1919 than in 1918 which indubitably is due to the fact that many cases that died from dysentery and cholera, which diseases were registered as of epidemic character, were reported as having died of diarrhea and enteritis.

Malaria.—The number of deaths attributed to malaria during the year is insensibly the same as that of the past year.

The number of deaths attributed to malaria in 1919 was 33,444 which is more than the deaths caused by dysentery (18,348) and cholera (12,931) in spite of the fact that the two latter diseases were registered as of epidemic character. Smallpox caused 45,831 victims.

The number of deaths registered from malaria each year can only be compared with the number of deaths registered from

TABLE F.—Summary of deaths from the most common diagnosis used during the year 1919.

Province.	Convul- sions.	Rate compared with total mortal- ity.	Simple menin- gitis.	Rate compared with total mortal- ity.	Congen- ital debility.	Rate compared with total mortal- ity.	Berberi of adults.	Rate compared with total mortal- ity.	Berberi of in- fants.	Rate compared with total mortal- ity.	Diar- rhea and enteritis under two years.	Rate compared with total mortal- ity.
		Per cent.		Per cent.		Per cent.		Per cent.		Per cent.		Per cent.
Abra	127	7.75	17	1.04	86	5.24	3	0.18			9	0.54
Albay	1,945	15.68	120	0.26	331	2.66	235	1.88			291	2.34
Ambo Camarines	1,055	11.60	24	0.38	173	1.98	132	1.50	217	2.42	130	1.50
Antique	426	7.85	56	1.12	213	3.83	76	0.18	98	1.81	78	1.44
Bataan	430	16.53	13	0.54	76	2.92		2.92	18	0.87	26	1.00
Batanes	20	13.20	1	0.60				1.20		1.80	2	1.20
Batangas	757	6.46	81	0.69	656	5.60	214	1.83	525	4.48	314	2.63
Bohol	518	4.51	85	0.73	615	5.35	111	0.96	343	2.98	336	2.92
Bulacan	886	10.14	123	1.41	573	6.56	250	2.86	562	6.43	141	1.61
Cagayan	977	17.40	45	0.70	188	2.80	145	2.70			28	0.40
Capiz	305	4.10	47	0.63	234	3.14	158	2.12	17	0.23	102	1.37
Cavite	991	17.55	56	0.99	208	3.68	150	2.65	110	1.94	124	2.19
Cebu	1,337	4.31	54	0.17	742	2.37	451	1.35	569	1.80	1,034	3.33
Ilocos Norte	762	8.80	15	0.17	365	4.22	55	0.63			62	0.71
Ilocos Sur	597	7.20	37	0.44	265	3.19	68	0.80			176	2.12
Iloilo	3,340	18.94	134	0.76	386	2.18	162	0.92			110	0.61
Isabela	146	5.02	8	0.27	133	4.57	158	5.43	43	1.47	18	0.61
Laguna	1,002	11.66	32	0.37	605	7.04	389	4.30	211	2.46	147	1.71
La Union	352	6.90	84	1.65	207	4.00	29	0.57	200	3.92	17	0.33
Levite	759	4.72	137	0.85	743	4.62	392	2.44	186	1.15	219	1.36
Mindoro	63	3.11	7	0.34	55	2.71	171	8.44	(*)		70	3.45
Mountain Province	39	1.17	24	0.72	27	0.81	8	0.24	19	0.57	53	1.59
Nueva Ecija	1,077	11.78	40	0.43	184	2.01	603	6.59			59	0.64
Nueva Vizcaya	125	10.96	7	0.61	46	4.00	15	1.31			9	0.78
Occidental Negros	1,696	12.93	126	0.96	274	2.09	262	1.99	94	0.72	308	2.35
Oriental Negros	426	4.35	193	1.97	284	2.90	485	4.96	172	1.76	148	1.12
Palawan	15	1.96	8	1.04	8	1.04	23	3.01	10	1.31	133	1.70
Pampanga	1,040	10.49	176	1.77	779	7.86	73	0.73	603	6.08	149	1.50
Pangasinan	2,092	7.51	87	0.31	976	3.50	183	0.65	218	0.78	451	1.62
Rizal	715	9.00	268	3.00	371	5.00	76	1.46	459	6.00	201	2.00
Romblon	23	1.60	10	0.69	26	1.80	21	1.46			24	1.67
Samar	670	5.36	366	2.93	248	1.98	195	1.77	564	4.51	377	3.02
Sorsogon	1,194	10.82	71	0.64	162	1.47		1.77	(*)		478	4.33
Tarlac	889	14.80	30	0.50	239	3.90		4.75	604	10.10	112	1.80
Tayabas	314	3.39	56	0.60	507	5.48	440	0.80	69	0.74	213	2.30
Zambales	315	12.60	21	0.84	47	1.88	20		75	3.00	27	1.08
Total	27,425	9	2,659	1	11,037	3	6,293	20	5,986	2	6,156	2

Province.	Diarrhea and enteritis over two years.	Rate compared with total mortality.	Acute bronchitis.	Rate compared with total mortality.	Malaria.	Rate compared with total mortality.	Broncho pneumonia.	Rate compared with total mortality.	Cancer.	Rate compared with total mortality.	Total.	Rate compared with total mortality.
		Per cent.		Per cent.		Per cent.		Per cent.		Per cent.		Per cent.
Abra.....	4	0.24	27	0.65	375	22.86	6	0.36	5	0.30	659	45.00
Albay.....	155	1.25	440	3.54	1,405	11.32	89	0.70	21	0.18	5,083	14.58
Ambo Camarines.....	126	1.38	256	2.80	2,211	24.60	24	0.30	22	0.29	4,384	48.70
Antique.....	98	1.81	29	0.55	197	3.34	1	0.02	19	0.35	1,225	22.70
Bataan.....	39	1.50	51	1.96	136	5.23	14	0.53	8	0.30	1,884	35.00
Batanes.....	3	1.80	3	2.93	3	1.80	1	0.60	2	1.20	40	26.30
Batangas.....	269	2.28	345	2.93	1,419	3.57	138	1.17	45	0.38	84,762	38.09
Bohol.....	233	2.02	209	1.81	495	4.29	388	3.37	85	1.40	3,833	29.60
Bulacan.....	118	1.35	292	3.34	306	3.50	87	0.99	1	0.01	3,373	38.60
Cagayan.....	56	1.30	108	1.80	1,748	31.60	12	0.20	27	0.36	3,308	58.60
Capiz.....	125	1.68	166	2.23	406	5.46	24	0.32	46	0.51	1,611	21.70
Cavite.....	126	2.23	156	2.76	454	8.04	89	1.57	106	0.36	2,515	44.40
Cebu.....	822	2.65	1,363	4.39	703	2.98	314	1.01	1	0.01	7,486	24.60
Ilocos Norte.....	54	0.62	112	1.29	1,068	12.35	100	1.14	24	0.28	2,593	30.00
Ilocos Sur.....	401	4.84	148	1.78	567	6.60	116	1.26	53	0.30	2,379	28.72
Iloilo.....	379	2.15	226	1.38	859	5.43	13	0.07	5	0.17	5,762	67.10
Isabela.....	38	1.30	36	1.23	749	25.42	8	0.21	5	0.16	1,342	67.10
Laguna.....	119	1.40	361	4.20	1,727	20.10	75	0.86	14	0.16	4,682	54.80
Leyte.....	39	0.76	131	2.51	540	10.59	77	1.51	3	0.06	1,679	33.38
La Union.....	149	0.93	513	3.19	1,255	7.80	113	0.90	50	0.31	4,516	28.09
Leyte.....	47	2.32	26	1.38	347	17.14	18	0.90	4	0.24	808	40.40
Mindoro.....	45	1.25	156	4.68	333	9.99	16	0.48	3	0.09	723	21.69
Mountain Province.....	88	0.96	200	24.09	1,352	14.68	34	0.37	12	0.13	5,649	57.00
Nueva Ecija.....	15	1.31	101	8.00	465	15.47	4	0.30	50	0.39	794	68.30
Nueva Vizcaya.....	622	4.74	103	0.79	1,742	13.25	50	0.39	1	0.52	5,327	42.64
Occidental Negros.....	189	1.93	355	3.63	2,029	2.07	139	1.42	51	0.52	4,471	45.70
Oriental Negros.....	21	2.77	4	0.52	107	14.02	6	0.78	31	0.31	218	30.52
Palawan.....	91	0.91	274	2.76	949	9.47	231	2.33	23	0.13	3,496	35.30
Pampanga.....	296	1.06	1,214	4.37	4,571	16.42	59	0.21	54	0.19	10,200	36.80
Rizal.....	220	2.00	252	3.00	426	5.00	83	1.00	23	0.03	3,095	40.20
Romblon.....	8	0.55	14	0.97	164	11.41	185	12.87	53	0.13	3,475	33.05
Samar.....	459	3.67	628	5.02	1,017	8.14	231	1.85	93	0.74	5,181	41.45
Sorsogon.....	282	2.96	296	4.90	1,633	14.80	9	0.08	39	0.35	4,063	36.70
Tarlac.....	66	1.10	390	2.56	1,436	7.29	67	1.12	13	0.21	2,752	46.00
Tayabas.....	126	1.36	390	4.21	948	10.24	89	0.96	19	0.20	3,171	34.20
Zambales.....	54	2.15	34	1.36	222	8.88	19	0.76	5	0.20	839	25.56
Total.....	5,700	2	11,301	4	33,444	10	2,929	1	884	0.30	112,332	36

* Included with "beriberi of adults."

b Included with "diarrhea and enteritis under two years."

TABLE F-1.—Summary of deaths from the most common diagnosis used during the year 1918.

Province.	Convul- sions.	Rate compared with total mortal- ity.	Simple menin- gitis.	Rate compared with total mortal- ity.	Congen- ital debility.	Rate compared with total mortal- ity.	Beriberi of adults.	Rate compared with total mortal- ity.	Beriberi of in- fants.	Rate compared with total mortal- ity.	Diar- rhea and enteritis under two years.	Rate compared with total mortal- ity.
		Per cent.		Per cent.		Per cent.		Per cent.		Per cent.		Per cent.
Abra.....	92	5.46	24	1.42	120	6.98	6	0.35			9	0.53
Albay.....	1,647	13.78	84	0.70	351	2.94	244	2.48			113	0.95
Amboas Camarines.....	956	10.30	13	0.20	147	1.60	125	1.40	73	0.80	194	2.10
Antique.....	284	5.08	19	0.34	254	4.54	23	0.41			75	1.34
Bataan.....	528	13.50	28	0.52	153	4.48	10	0.20	48	1.40	11	0.32
Batanes.....	20	10.30			2	0.96	6	2.88	2	0.96	5	2.40
Batangas.....	1,217	8.26	85	0.59	811	5.66	129	0.88	715	4.97	232	1.75
Bohol.....	1,391	2.86	18	0.16	566	5.06	143	1.28	(a)		381	3.41
Bulacan.....	1,155	8.44	125	0.91	796	5.86	925	6.76			532	2.88
Cagayan.....	1,276	14.00	34	0.40	95	1.00	123	1.70			90	1.00
Capiz.....	240	4.80	19	0.38	296	5.92	123	2.46			93	1.05
Cavite.....	1,595	15.72	43	0.44	271	2.71	367	3.67	103	1.03	478	4.78
Cebu.....	1,156	5.25	168	0.76	679	3.08	1,084	4.92			563	2.55
Ilocos Norte.....	868	11.54	29	0.78	389	5.70	61	0.81			83	1.10
Ilocos Sur.....	931	13.47	81	1.18	396	5.82	46	0.67			235	4.19
Iloilo.....	210	1.06	122	0.62	365	1.87	162	0.80			127	3.13
Isabela.....	292	7.19	19	0.46	180	3.94					199	0.17
Laguna.....	1,319	11.27	54	0.05	683	5.72	46	0.80			35	0.60
La Union.....	734	12.73	55	0.82	373	6.47	667	3.43	264	1.35	223	1.14
Leyte.....	1,039	5.28	157	0.81	1,046	5.05	153	6.12	(a)		263	1.93
Mindoro.....	28	1.11	1	0.04	13	0.52					37	0.74
Mountain Province.....	88	1.76	139	2.78	134	2.68	515	5.75			38	0.42
Nueva Ecija.....	955	10.67	34	0.37	318	3.55	16	0.50			26	0.80
Nueva Vizcaya.....	115	3.79	15	0.40	73	2.40	16	2.12	32	0.23	79	0.55
Occidental Negros.....	2,021	14.08	144	1.00	312	2.17	305	3.49	21	0.23	75	0.81
Oriental Negros.....	545	5.88	76	0.82	234	2.53	323	3.49			8	0.24
Palawan.....	9	0.72	4	0.32	7	0.56	8	0.64			3	0.24
Pampanga.....	1,613	11.88	239	1.76	1,043	7.61	73	0.83	631	4.65	246	1.81
Pangasinan.....	2,984	11.16	20	0.07	912	3.41	90	0.33	240	0.89	405	1.57
Rizal.....	1,376	29.00	579	12.00	423	9.00	237	5.00	691	14.00	572	12.00
Romblon.....	180	11.00	3	0.18	29	1.77	58	3.54			31	0.34
Samar.....	701	7.71	201	2.21	81	0.89	425	4.67			42	0.58
Sorsogon.....	915	12.57	77	1.06	80	1.09	156	2.14				
Tarlac.....	1,072	13.00	31	0.47	217	3.26			(a)		104	1.02
Tayabas.....	446	4.01	39	0.87	454	4.00	216	1.91	383	5.74		
Zambales.....	401	12.03	30	0.90	23	0.69	96	2.88	255	2.25	34	1.02
Total.....	29,399	12	2,367	10	12,286	50	6,961	30	3,458	1	5,704	2

Province.	Diarrhea and enteritis over two years.	Rate compared with total mortality.	Acute bronchitis.	Rate compared with total mortality.	Malaria.	Rate compared with total mortality.	Broncho-pneumonia.	Rate compared with total mortality.	Cancer.	Rate compared with total mortality.	Total.	Rate compared with total mortality.
		<i>Per cent.</i>		<i>Per cent.</i>		<i>Per cent.</i>		<i>Per cent.</i>		<i>Per cent.</i>		<i>Per cent.</i>
Abra	15	0.89	23	1.35	546	32.44	25	1.48	1	0.05	861	51.15
Albay	197	1.65	535	4.45	536	4.50	108	0.90	28	0.23	3,843	32.38
Ambo Camrines			127	1.40							1,635	18.20
Antique			65	1.16	374	6.69			17	0.30	1,111	19.20
Bataan	36	1.05	45	1.02	332	9.73	24	0.70	10	0.29	1,225	36.20
Batanes									17	0.30	35	12.40
Batangas									47	0.32	5,029	35.23
Bohol	111	0.77	502	3.48	662	4.60	498	3.46			2,129	18.60
Bulacan			167	1.49	444	3.97	19	0.17			4,917	36.00
Agayan	62	0.70	598	4.39	579	4.23	185	1.35	22	0.16	3,971	48.20
Capiz	94	1.06	163	2.00	2,109	25.20	17	0.27	2	0.02	2,200	25.00
Cavite	295	2.55	178	3.56	1,157	14.46					3,951	39.50
Cebu	563	2.66			799	8.00					7,191	21.20
Ilocos Norte	50	0.66	536	2.43	2,442	10.40					3,145	41.80
Ilocos Sur	176	2.58	123	1.63	1,343	17.86	199	2.64			2,850	42.65
Iloilo	119	0.60	193	2.83	721	10.60	56	0.80	15	0.22	2,306	12.00
Isabela			241	1.23	836	14.39					1,283	26.20
Laguna	114	0.10	101	2.48	584	14.39					4,163	35.90
La Union	48	0.83	316	2.72	1,417	12.22	53	0.05	18	0.02	2,007	40.14
Levite	140	0.72	163	2.83	503	8.72	35	0.60	17	0.29	6,725	34.51
Mindoro	(6)		739	3.81	2,130	10.92	257	1.32	63	0.32	522	20.88
Mountain Province	29	0.58	12	0.48	232	5.76	6	0.12			1,218	24.36
Nueva Ecija	38	0.42	225	2.62	535	5.98	62	0.69	16	0.17	2,736	27.38
Nueva Vizcaya			89	2.90	536	18.21					870	29.60
Occidental Negros	203	1.41	37	0.26	1,363	2.52	24	0.17	30	0.21	4,550	31.85
Oriental Negros	41	0.44	230	2.48	2,574	27.79	11	0.12	96	1.04	4,226	45.60
Palawan	4	0.32	5	0.40	147	11.86	22	1.77			209	16.86
Pampanga	210	1.54	443	2.26	859	6.00	359	2.64	23	0.16	5,739	42.30
Pangasinan	334	1.25	239	0.89	4,527	16.94	34	0.12	30	0.11	9,815	36.70
Rizal			580	12.00	726	9.00	230	5.00	46	0.08	5,590	37.70
Romblon	47	2.87	67	4.09	228	13.93					612	37.40
Samar	61	0.67	280	3.08	1,121	12.33	28	0.31	9	0.09	2,368	32.51
Sorsogon	(6)		314	4.31	659	9.05					2,243	30.60
Tarlac	140	2.10	277	4.15	622	9.33					2,742	38.89
Tayabas	107	0.94	376	3.17	959	8.49	256	2.26	24	0.21	3,296	29.20
Zambales	44	1.32	27	0.81	282	8.46	24	0.92	2	0.06	963	28.89
Total	3,278	1	8,513	8	33,192	13	2,592	1	516	0.21	108,766	43

a Included with "beriberi of adults."

b Included with "diarrhea and enteritis under two years."

TABLE F-2.—Summary of deaths from the most common diagnosis used during the year 1917.

Province.	Convul- sions.	Rate compared with total mortal- ity.	Simple menin- gitis.	Rate compared with total mortal- ity.	Congen- ital debility.	Rate compared with total mortal- ity.	Beriberi of adults.	Rate compared with total mortal- ity.	Beriberi of in- fants.	Rate compared with total mortal- ity.	Diarrhoea and inter- itis un- der two years.	Rate com- pared with total mortal- ity.
		Per cent.		Per cent.		Per cent.		Per cent.		Per cent.		Per cent.
Abra.....	10	0.67	2	0.13	75	5.17	4	0.26			24	1.65
Albay.....	1,016	16.16	48	0.76	241	3.83	198	3.44			61	0.97
Amboyan Camarines.....	860	18.40	9	0.20	86	1.80	67	0.40	25	0.50	106	2.30
Antique.....	268	7.95	14	0.42	145	4.30	15	0.44			144	4.27
Bataan.....	359	23.13	4	0.25	84	5.41	3	0.19	31	1.99	2	0.12
Batanes.....	16	4.00			18	4.50					8	2.00
Batangas.....	841	11.51	52	0.68	595	7.81	691	9.08			90	1.18
Bohol.....	316	3.90	12	0.15	560	7.08	84	1.06			352	4.46
Bolton.....	1,073	17.01	106	1.68	451	7.15	470	7.45	(c)		306	4.85
Bulacan.....	876	16.00	79	1.00	122	2.10	72	1.00			78	1.00
Capiz.....	228	3.80	23	0.38	42	0.70	143	2.38			203	3.36
Cavite.....	955	19.70	29	0.39	222	4.58	279	5.75			349	7.20
Cebu.....	794	5.29	307	2.04	588	3.66	552	5.68			541	3.60
Ilocos Norte.....	864	14.88	250	4.30	333	5.73	63	1.08			86	1.48
Ilocos Sur.....	685	14.15	47	0.99	236	5.00	21	0.40			226	4.79
Iloilo.....	45	0.38	86	0.75	214	1.80	136	1.10			263	2.01
Isabela.....	247	8.26	8	0.26	139	4.65					136	4.55
Laguna.....	1,001	20.85	20	0.40	414	7.83					141	2.67
La Union.....	552	17.75	37	1.19	254	4.74	13	0.42			18	0.57
Leyte.....	756	6.13	147	1.19	474	3.85	578	4.69			235	1.91
Mindoro.....	65	4.05	2	0.12	93	2.68	103	6.42	(c)		28	1.74
Mountain Province.....	94	3.70	92	3.60	98	3.92			2	0.08	13	0.52
Nueva Ecija.....	6,60	13.57	19	0.39	140	2.92	151	3.15	170	3.55	112	2.34
Nueva Vizcaya.....	49	5.58	2	0.22	27	2.39	21	2.39			6	0.68
Occidental Negros.....	1,930	17.92	114	1.06	287	2.66	228	2.12	14	0.12	127	1.18
Oriental Negros.....	1,337	5.90	47	0.82	203	3.55	182	3.19	18	0.32	101	1.77
Palawan.....	7	1.44	1	0.21	8	1.64	11	2.26			6	1.23
Pampanga.....	1,433	20.80	167	2.42	729	10.58	37	0.53	340	4.93	180	2.61
Pangasinan.....	2,373	18.77	32	0.25	63	5.54	63	2.49	181	1.45	229	1.81
Rizal.....	1,128	21.00	186	3.00	287	5.00	141	2.00	328	6.00	237	4.00
Romblon.....	648	8.42	230	3.00	59	0.77	218	2.95			70	0.90
Samar.....	617	12.02	42	0.82	79	1.94	112	2.18			21	0.40
Sorsogon.....	1,176	23.52	24	0.58	177	3.54			173	3.46		
Tarlac.....	403	6.51	52	0.84	499	8.07	365	5.90	192	3.10	184	3.00
Tayabas.....	354	21.24	7	0.42	27	1.62	42	2.56	(a)		16	0.96
Zambales.....												
Total.....	23,036	9	2,297	1	8,647	3	5,363	2	1,474	6	4,699	2

Province.	Diarrhea and enteritis over two years.	Rate compared with total mortality.	Acute bronchitis.	Rate compared with total mortality.	Malaria.	Rate compared with total mortality.	Broncho pneumonia.	Rate compared with total mortality.	Cancer.	Rate compared with total mortality.	Total.	Rate compared with total mortality.
		Per cent.		Per cent.		Per cent.		Per cent.		Per cent.		Per cent.
Abra	9	0.62	18	1.24	622	42.92	32	2.20	2	0.13	798	56.10
Albay	155	2.46	398	6.33	546	8.68	38	0.60	25	0.39	2,726	43.09
Ambo Camarines	(b)		95	2.00							1,248	29.75
Antique			100	2.96	310	9.19			14	0.42	1,010	29.70
Bataan	7	0.46	26	1.67	233	15.01	1	0.06	15	0.96	1,765	48.60
Batanes			1	0.25							43	19.70
Batangas	53	0.69	332	4.36	1,259	16.51	20	0.26	31	0.40	3,964	67.38
Bohol	1		153	1.93	195	2.47	3	0.03			1,675	21.40
Bulacan			340	5.39	468	7.42	44	0.69	42	0.66	3,300	52.30
Cagayan	74	1.00	146	2.00	1,528	28.00	45	0.80	3	0.06	3,023	56.40
Capiz	68	1.12	144	2.40	608	10.13					1,459	24.10
Cavite			161	3.32	700	14.44					2,100	44.10
Cebu	541	3.60	1,636	10.90	1,697	11.60					6,956	55.60
Ilocos Norte	84	1.44	25	0.43	1,634	28.15					6,956	48.20
Ilocos Sur	188	3.36	200	4.24	868	18.40	9	0.19	20	0.40	3,339	57.50
Iloilo	311	2.73	134	1.17	905	7.90					2,094	61.20
Isabela			107	3.58	1,005	36.45					1,642	18.40
Laguna	87	1.65	135	2.55	1,196	22.62	25	0.47	19	0.36	3,038	48.60
La Union	33	1.06	179	5.76	1,384	10.73	23	0.73	16	0.51	1,459	43.77
Leyte			310	2.64							2,500	20.22
Mindoro	(b)		25	1.56	491	30.64					1,767	45.42
Mountain Province	22	0.88	285	11.40	310	12.40	17	0.68			933	37.32
Nueva Ecija	58	1.20	94	1.96	614	12.82	17	0.36	9	0.18	2,044	43.20
Nueva Vizcaya			12	2.50	226	23.76					343	39.50
Ocidental Negros	118	1.10	53	0.54	1,155	10.72	10	0.10	32	0.32	4,073	37.70
Palawan	23	0.40	77	1.35	1,815	32.81	2	0.04	74	1.30	2,939	63.20
Pangasinan	4	0.82	17	1.44	12	14.77	10	2.05			126	27.51
Pampanga	90	1.30	284	4.12	583	9.00	153	2.22	28	0.40	4,034	58.50
Rizal	127	1.00	1,403	11.09	3,328	27.21	121	0.95	28	0.22	8,576	67.70
Romblon			185	3.00	245	4.00	39	1.00	40	1.00	2,816	52.40
Samar	116	1.50	206	2.68	826	10.74	4	0.05	20	0.26	2,397	31.16
Sarangani			233	4.54	522	10.16					1,626	31.70
Tarlac	173	3.46	180	3.60	791	15.82					2,694	53.88
Tayabas	80	1.29	240	3.88	774	12.52	64	1.03	20	0.32	2,873	46.50
Zambales	38	2.28	41	2.46	214	12.84	3	0.12	6	0.36	747	44.82
Total	2,459	1	7,970	3	26,144	10	679	0.27	444	0.17	83,212	33

^a No complete record available.

^b Included with "diarrhea and enteritis under two years."

^c Included with "beriberi of adults."

TABLE F-3.—Summary of deaths from the most common diagnosis used during the year 1916.

Province.	Con- vul- sions.	Rate com- pared with total mortal- ity.	Simple menin- gitis.	Rate com- pared with total mortal- ity.	Congen- ital debility.	Rate com- pared with total mortal- ity.	Beriberi of adults.	Rate com- pared with total mortal- ity.	Beriberi of infants.	Rate com- pared with total mortal- ity.	Diarrhea and ente- ritis un- der two years.	Rate com- pared with total mortal- ity.
		Per cent.		Per cent.		Per cent.		Per cent.		Per cent.		Per cent.
Abra.....	10	0.75			68	5.12					16	1.20
Albay.....	1,380	17.18	75	0.93	291	3.62	285	3.54			149	1.85
Amboi Camarines.....	1,040	15.30	56	0.80	89	0.30	50	0.60	44	0.60	240	3.20
Antique.....	1,193	8.96	27	1.25	160	7.40	9	0.42			154	7.10
Bataan.....	275	14.84	13	0.70	134	7.23	6	0.32	35	1.89	8	0.43
Batanes.....	10	4.60			17	4.60	5	2.30			11	5.06
Batangas.....	829	11.39	43	0.59	594	8.16	548	7.51			131	1.80
Bonol.....	213	4.29	5	0.10	321	6.87	43	0.87			278	5.60
Bulacan.....	1,555	15.56	139	1.87	427	5.73	346	4.66	(^c)		363	4.89
Cagayan.....	1,790	21.00	27	0.70	99	6.62	66	1.00			24	0.60
Capiz.....	170	4.95	19	2.47	245	6.12	123	3.07			86	0.79
Cavite.....	968	17.85	32	0.59	223	4.11	254	4.68			370	6.82
Cebu.....	880	6.81	177	1.47	406	3.38	359	3.00			371	8.09
Ilocos Norte.....	639	12.21	32	0.72	278	6.99	107	2.42			69	1.56
Ilocos Sur.....	535	13.09	45	1.41	265	6.19	94	0.58			155	3.32
Iloilo.....	2,386	21.10	137	1.21	33	0.57	93	0.80			169	1.49
Isabela.....	189	9.80	11	0.56	35	2.85					14	0.72
Laguna.....	1,039	17.55	66	1.11	371	7.29	13	0.53			83	1.46
La Union.....	405	16.60	33	1.36	190	7.79	332	3.02			13	0.53
Leyte.....	747	6.78	27	0.22	722	6.57	76	5.50	(^c)		368	3.38
Mindoro.....	1	0.06			20	1.83					51	3.38
Mountain Province.....	121	5.20	50	2.77	115	5.00					121	2.95
Nueva Ecija.....	462	11.27	20	0.48	103	2.51			272	6.64	13	1.54
Nueva Vizcaya.....	33	3.92			44	5.21	3	0.36			162	1.62
Occidental Negros.....	1,680	16.80	47	0.47	239	2.39	183	1.83	46	0.46	65	1.66
Oriental Negros.....	1,251	6.40	125	3.19	132	3.37	87	2.22	23	0.59	7	1.92
Palawan.....	8	2.19			4	1.09	9	2.47			206	2.88
Pampanga.....	1,236	17.27	214	2.99	871	10.92	53	0.74	382	5.34	201	2.12
Pangasinan.....	2,295	8.20	28	0.22	687	5.66	17	2.00	260	2.11	276	4.00
Rizal.....	1,173	18.00	252	4.00	313	5.00	136	2.00	324	5.00		
Romblon.....												
Samar.....	544	8.70	81	1.30	82	1.31	222	2.55			29	0.46
Sorsogon.....	510	10.58	51	1.06	29	0.60	55	1.14			81	1.68
Tarlac.....	938	28.18	35	1.05	166	4.98			261	7.83		
Tayabas.....	455	6.94	47	0.71	429	6.54	366	5.58	228	3.47	108	1.64
Zambales.....	311	16.00	10	0.50	54	2.80	35	1.80	(^a)		39	2.00
Total.....	23,711	13.00	1,924	1.00	8,269	5.00	3,905	2	1,875	1	4,384	2

Province.	Diarrhea and enteritis over two years.	Rate compared with total mortality.	Acute bronchitis.	Rate compared with total mortality.	Malaria.	Rate compared with total mortality.	Broncho-pneumonia.	Rate compared with total mortality.	Cancer.	Rate compared with total mortality.	Total.	Rate compared with total mortality.
		Per cent.		Per cent.		Per cent.		Per cent.		Per cent.		Per cent.
Abra	3	0.22	8	0.60	621	46.79			3	0.22	729	54.20
Albay	211	2.62	572	7.02	730	9.08	14	0.17	18	0.22	3,725	46.38
Ambos Camarines.	(b)										1,519	26.00
Antique	15	0.80	39	1.80	263	12.17			16	0.74	861	39.60
Bataan	44		44	2.87	266	14.36	1	0.05	7	0.37	804	43.40
Batanes	3		3	1.38	253						39	15.30
Batangas	40	0.55	305	4.19	539	7.40	46	0.63	24	0.32	3,099	43.58
Bohol			62	1.25	120	2.40	8	0.16			1,050	21.60
Bulacan	26	0.70	260	3.50	547	7.47	8	0.11	27	0.36	3,272	44.00
Cagayan	54	1.17	62	1.00	920	25.00	21	0.50	3	0.08	2,038	56.70
Capiz			115	2.87	727	18.17					1,489	32.70
Cavite	371	3.09	124	2.28	691	12.74					2,662	40.90
Cebu	77	1.74	378	3.15	1,892	15.70					4,834	39.10
Ilocos Norte	227	5.22	27	0.61	1,232	27.85					2,361	53.50
Ilocos Sur	228	2.02	61	1.52	831	20.32	6	0.14	24	0.50	2,173	53.19
Iloilo			94	0.81	880	7.63					4,020	35.80
Isabela			38	1.96	525	27.21					832	41.60
Laguna	43	0.73	166	2.80	1,210	10.42	27	0.46	18	0.30	3,023	51.00
La Union	20	0.81	103	4.22	425	17.41	18	0.72	7	0.28	1,227	59.00
Leyte	(b)		325	2.95							2,521	92.92
Mindoro			2	0.13	810	53.90					960	67.20
Mountain Province	12	0.67	140	7.20	777	13.86	1	0.03			35.95	
Nueva Ecija	113	2.75	165	4.02	235	7.20	12	0.29	2	0.04	1,565	33.12
Nueva Vizcaya			17	2.01	266	31.51					376	44.20
Occidental Negros	116	1.16	46	0.46	1,049	10.49	15	0.15	31	0.31	3,614	36.14
Oriental Negros	39	0.99	87	2.22	1,067	27.22	1	0.03	22	0.56	1,899	49.00
Palawan	5	1.87	2	0.54	66	18.13	12	3.57			113	31.05
Pampanga	127	1.77	307	4.29	591	8.44	118	1.51	17	0.23	4,122	57.30
Pangasinan	132	1.07	498	3.15	3,316	26.95	104	0.84	28	0.32	7,506	60.90
Rizal			222	3.00	463	6.00	87	2.00	34	1.00	3,280	51.60
Romblon												
Samar	98	1.57	220	3.52	530	8.48	5	0.08	22	0.35	1,833	29.33
Sorsogon			155	3.21	433	8.98					1,314	27.20
Tarlac	102	3.06	232	6.96	659	19.77					2,393	71.79
Tayabas	110	1.67	311	1.90	790	12.05	67	1.02	26	0.39	2,937	44.90
Zambales	55	3.00	36	1.90	107	5.37	2	0.10	4	0.20	653	34.70
Total	2,224	1	5,226	3	23,138	13	573	0.31	333	0.10	75,562	42

* No complete record available.

^b Included with "diarrhea and enteritis under two years."

^c Included with "beriberi of adults."

tuberculosis. Certainly malaria is endemic in the Philippines and therefore the statistics of this disease can be considered as almost correct.

In September the Central Office received alarming notice with reference to the high mortality registered in the municipality of Bulan of the Province of Sorsogon in which, with a population of 19,000 people, were registered weekly, 28 to 35 deaths. The Central Office directed Dr. Catalino Gavino, a health officer from the hospital of communicable diseases and Dr. Fajardo, a bacteriologist of the Bureau of Science, to make an investigation as to the cause of the high mortality registered in the mentioned municipality. Said investigators, after a scientific study, reported that the deaths registered were due to a pernicious form of malaria, and that they found that 60 per cent of the population were suffering from that disease.

An extensive free distribution of quinine, educational campaign and drainage of certain low places were put in execution, with the result of amelioration of cases, though not completely, due to lack of funds for carrying on the engineering work necessary.

The knowledge of the mechanism of the transmission of malaria dictates the methods of control. The principal measure is to prevent the access of infected mosquitoes (anopheles) to the people.

For the attainment of this end the following measures are necessary: (a) Elimination of mosquito breeding places; (b) protecting well persons against infected mosquitoes; (c) cure the infected persons by quinine treatment. The first measure is strictly an engineering problem, the second and third sanitary problems.

The solution of the first problem is almost impossible in the Philippines due to the large extension of low lands and the small appropriation of funds for sanitary purposes. It is true that with good coöperation of the people many mosquito breeding places could be destroyed, but many of the people are not inclined to lend such coöperation.

The second and third measures are purely sanitary and only with a continued and laborious educational campaign by lectures given on the importance of the use of mosquito bars and screens and drainage of the low places in the premises on which the houses are built, can success be attained. Lectures on these subjects should be given not only by the sanitary personnel, but also by the school teachers and employees of charitable institutions.

With reference to reducing the number of infected persons by quinine treatment, the district health officers are referred to an article written by Dr. C. C. Base, which appeared in the American Journal of Public Health, issued in the month of March, 1920, pages from 216 to 221 which is of great interest in this matter.

Summary.—The number of deaths registered in the year 1919 from the most common diagnoses used in the Philippines was 112,332, or 3,566 more than those registered in 1918. If compared with those registered in 1916 and 1918 there is an excess of 29,120 and 36,770, respectively, over the deaths registered in those two years. If it is remembered that in 1918 as well as in 1919 several epidemics passed through the provinces while the years 1916 and 1917 were free from epidemics, it may be stated that in the case of epidemics many cases diagnosed as died from the most common diagnoses used, really died from communicable diseases, but were reported as died from the most common diagnoses used.

Mortality from communicable diseases.—Tables G, G-1, G-2, and G-3 show the number of deaths registered from communicable diseases in the years 1919, 1918, 1917, and 1916. Of these diseases comments will be relative to anthrax, cerebro-spinal meningitis, diphtheria, dengue, hookworm, measles, syphilis, typhoid fever, tuberculosis, tetanus, and whooping cough. Cholera, dysentery, smallpox, and influenza will be commented upon under separate sections because they were registered as of epidemic character during the year.

Anthrax.—Two hundred seventy-eight deaths from anthrax were reported which is a larger number than those reported in the previous years.

Samar stands at the head of all the provinces with reference to the number of cases reported. This fact needs explanation.

Firstly, it is necessary to state that the deaths reported by the district health officers as anthrax are not due to the bacillus anthracis infection but to staphylococcus, because in the Spanish lexicon the name anthrax is most commonly applied to a collection of boils, while as it is known, the specific agent of the boil is staphylococcus pyogenus. Secondly, the Province of Samar reported the largest number of death attributed to the mentioned disease but this is simply by error in diagnoses because there was no sanitary personnel appointed in Samar in 1919, and this province having many cases of infected ulcers and yaws, which the people of that province call "cancaro," and "cancaro" means anthrax to them.

TABLE G.—Summary of deaths caused by communicable diseases occurring during the year 1919.

Province.	An- thrax.	Rate com- pared with total mor- tality.		Amoe- bic dysen- tery.	Rate com- pared with total mor- tality.		Bacil- lary dysen- tery.	Rate com- pared with total mor- tality.		Chol- era.	Rate com- pared with total mor- tality.		Cere- bro- spinal men- ingitis.	Rate com- pared with total mor- tality.		Diph- theria.	Rate com- pared with total mor- tality.		Glan- ders.	Rate com- pared with total mor- tality.		Hook- worm.	Rate com- pared with total mor- tality.		
		Per cent.	Per cent.		Per cent.	Per cent.		Per cent.	Per cent.		Per cent.	Per cent.		Per cent.	Per cent.		Per cent.	Per cent.		Per cent.	Per cent.		Per cent.		
Abra						3.53	58	3.53																	
Albay						1.24	334	1.24																	
Ambos Camarines	8	0.08				2.63	254	2.63																	
Antique	5	0.09				7.23	381	7.23																	
Bataan	1	0.03		92	3.52	4.69	14	0.53																	
Batanes				4	2.40	6.77	794	6.77																	
Batangas						0.20	23	0.20																	
Bohol	4	0.03		108	0.94	6.85	599	6.85																	
Bulacan	1	0.01				2.20	113	2.20																	
Cagayan	3	0.05				7.91	284	7.91																	
Capiz	25	0.33				1.92	582	1.92																	
Cavite	2	0.03				4.23	142	4.23																	
Cebu	28	0.08				6.73	1,455	6.73																	
Ilocos Norte	6	0.06				0.20	18	0.20																	
Ilocos Sur						2.65	200	2.65																	
Iloilo	7	0.04				15.07	2,716	15.07																	
Isabela						3.22	277	3.22																	
Laguna	1	0.01		465	9.11		735	8.77																	
La Union	3	0.05		301	1.87		980	19.21																	
Leyte	15	0.09		168	8.30		18	0.11																	
Mindoro	2	0.10		96	2.28		266	13.09																	
Mountain Province	1	0.02					91	2.19																	
Nueva Ecija	4	0.05				5.92	581	6.64																	
Nueva Vizcaya				21	1.84		21	1.84																	
Occidental Negros	6	0.05		1,331	10.60		379	2.88																	
Oriental Negros	6	0.06		322	3.29		162	1.66																	
Palawan				49	6.42																				
Pampanga	11	0.11				0.13	870	0.13																	
Pangasinan	28	0.10				10.00	5,013	18.01																	
Rizal	2	0.03		397	4.30	1.16	680	9.52																	
Romblon																									
Samar	98	0.78		231	1.48	8.08	101	8.08																	
Sorsogon	2	0.02		761	6.89																				
Tarlac	3	0.06					423	3.83																	
Tayabas	4	0.04		420	4.54	6.08	392	7.84																	
Zambales	2	0.08		369	14.76		786	8.49																	
Total	278	0.09		5,225	2		12,841	4	18,052	3		216	0.07		148	0.47		45	0.14		863	0.28			

Province.	Lep- tosis.	Rate com- pared with total mor- tality.		Meas- les.	Rate com- pared with total mor- tality.		Rabies.	Rate com- pared with total mor- tality.		Small- pox.	Rate com- pared with total mor- tality.		Syph- ilis.	Rate com- pared with total mor- tality.		Ty- phoid fever.	Rate com- pared with total mor- tality.		Tuber- culosis of the lungs.	Rate com- pared with total mor- tality.		Tuber- culosis of other forms.	Rate com- pared with total mor- tality.	
		Per cent.	Per cent.		Per cent.	Per cent.		Per cent.	Per cent.		Per cent.	Per cent.		Per cent.	Per cent.		Per cent.	Per cent.		Per cent.	Per cent.		Per cent.	
Province.	Abra			1	0.06	1	1	0.06	1	599	5.13			4.51	127	74	4.51	127		15	7.75		0.91	
	Albay			20	0.16	1,657	5	0.04	1,657	2,645	23.01		8	0.06	1,103	74	0.59	1,103		8	8.89		0.06	
	Ambos Camarines	4	0.04	28	0.30	999	1	0.01	999	378	4.32		3	0.03	1,082	92	0.85	1,082		28	10.18		0.29	
	Antique			1	0.02	1,880	34	0.03	1,880	480	18.46		2	0.07	401	47	0.87	401		34	7.39		0.63	
	Bataan			1	0.03	480	3	0.11	480						243	48	1.82	243		6	9.34		0.23	
	Batanes			6	0.05		2	0.01							28			28		12	16.80		7.20	
	Batangas			4	0.03		8	0.04							827	182	1.55	827		46	7.06		0.39	
	Bohol			4	0.04		1	0.01							749	58	0.50	749		50	6.50		0.43	
	Bulacan	1	0.01	7	0.09		1	0.01							1,127	213	2.43	1,127		28	12.90		0.32	
	Cagayan	3	0.04	7	0.05		1	0.01							463	180		463		34	8.70		0.46	
	Capiz			3	0.05		1	0.01							639	46	0.81	639			8.59			
	Cavite			64	0.19	837	2	0.01	837	140	9.52		3	0.05	6,577	185	0.55	6,577		109	6.80		0.33	
	Cebu	14	0.04	1	0.01	2,314	2	0.01	2,314	33.70					574	24	0.27	574		22	5.03		0.25	
	Iloocos Norte	2	0.02	1	0.01	1,732	9	0.05	1,732	21.70					2,019	75	4.16	2,019		11	6.63		0.13	
	Iloocos Sur	2	0.02	27	0.15	1,996	4	0.17	1,996	11.23					286	17	0.57	286		64	11.43		0.36	
	Iloilo	12	0.06	1	0.03		1	0.01							484	85	0.98	484		2	9.83		0.06	
	Isabela			3	0.03		1	0.01							383	27	0.52	383		40	8.46		0.46	
	Laguna			3	0.03		1	0.01							1,101	151	0.94	1,101		14	7.50		0.27	
	La Union			3	0.02		1	0.01							1,153	63	0.23	1,153		16	6.86		0.91	
	Leyte			7	0.34		3	0.03							97	27	0.65	97		10	2.33		0.79	
Mindoro	1	0.02	2	0.05		3	0.03							621	205	2.13	621		60	6.79		0.55		
Mountain Province	7	0.07	10	0.10		4	0.04							54			54		2	4.73		0.17		
Nueva Ecija			4	0.04		5	0.05							1,107	125	0.95	1,107		45	8.44		0.35		
Nueva Vizcaya			5	0.05		9	0.06							30	30	0.31	30		10	5.79		0.10		
Occidental Negros	2	0.02	4	0.04		9	0.05							59	15	1.96	59		12	7.83		0.26		
Oriental Negros			10	0.10		1	0.01							1,061	156	1.56	1,061		13	10.60		0.13		
Palawan			5	0.02		14	0.05							2,201	85	0.30	2,201		68	7.90		0.24		
Pampanga	2	0.01	9	0.13		3	0.04							74	74	1.04	74		28	10.36		0.39		
Pangasinan			16	1.11		3	0.04							57	58	4.03	57			3.96				
Rizal			76	0.61		2	0.02							682	239	1.91	682		509	5.46		4.07		
Romblon			5	0.05		1	0.02							628	213	1.90	628		10	6.69		0.09		
Samar	7	0.05	3	0.05		1	0.02							615	189	3.78	615		25	13.30		0.50		
Sorsogon	3	0.03	5	0.05		2	0.02							1,073	93	1.00	1,073		65	11.59		0.69		
Tarlac			13	0.14		1	0.04							302	36	1.24	302		30	12.08		1.20		
Tayabas			14	0.56		1	0.04							1			1							
Zambales																								
Total	60	0.19		362	0.12		71	0.02	45,873	15			199	0.06		3,201	1	29,340	9	1,562			0.50	

TABLE G.—Summary of deaths caused by communicable diseases occurring during the year 1919—Continued.

Province.	Tetan.	Rate compared with total mortality.	Vario- loid.	Rate compared with total mortality.	Vari- cella.	Rate compared with total mortality.	Whoop- ing cough.	Rate compared with total mortality.	In- fluenza.	Rate compared with total mortality.	Pneu- monia.	Rate compared with total mortality.	Total.	Rate compared with total mortality.	Rate compared with total mortality.
		Per cent.		Per cent.		Per cent.		Per cent.		Per cent.		Per cent.		Per cent.	Per cent.
Abra.....	33	0.23					5	0.30	116	7.08	3	0.18	401	0.18	27.32
Albay.....	18	0.18					8	0.06	374	1.38			4,125		33.25
Amboas Camarines.....	11	0.35	21	0.20	17	0.15	28	0.30	347	3.66	6	0.06	3,481		34.80
Antique.....	8	0.30	21	0.03	3	0.06	11	0.20	47	0.89	1	0.02	3,029		56.00
Bataan.....	10	6.00	1		1	0.03	6	0.23	19	0.73	26	1.00	1,077		41.00
Batanes.....	23	0.19					33	0.28	76	0.65	57	2.40	72		47.40
Batangas.....	44	0.33			28	0.24	89	0.77	609	5.29	11	0.09	4,708		27.40
Bohol.....	68	0.77					13	0.14	41	0.46	64	0.73	3,020		40.00
Bulacan.....	50	0.50					24	0.40	177	3.60	13	0.20	3,269		35.00
Cagayan.....	6	0.08			8	0.11	65	0.87	52	0.70	18	0.23	2,619		22.00
Capiz.....	15	0.26					3	0.05	9	0.15	40	0.70	1,698		30.08
Cavite.....	72	0.22					282	0.85	716	2.15	91	0.27	19,278		36.70
Cebu.....	3	0.02					2	0.02	33	0.38	23	0.26	4,309		49.20
Ilocos Norte.....	96	1.15					1	0.01	275	4.04			3,960		58.26
Ilocos Sur.....	39	0.22					29	0.16	275	1.56	29	0.16	8,222		48.60
Iloilo.....	21	0.24	5	0.18	6	0.20	15	0.51	263	8.91	47	0.61	913		47.90
Isabela.....	1	0.01					19	0.22	28	0.32	44	0.51	2,292		26.80
Laguna.....	8	0.05					18	0.35	54	1.05	30	0.58	2,107		42.14
La Union.....	10	0.49	10	0.06	12	0.07	56	0.35	323	2.35	59	0.37	8,646		53.21
Leyte.....	10	0.10					4	0.96	134	6.62	10	0.49	980		46.50
Mindoro.....	5	0.11	10	0.24			10	0.10	183	4.84	20	0.48	757		20.26
Mountain Province.....	1	0.08					48	0.87	57	0.57	101	1.17	3,697		44.58
Nueva Ecija.....	10	0.10					197	2.01	215	1.64	26	0.14	1,120		10.52
Nueva Vizcaya.....	1	0.08			1	0.01	18	0.18	299	3.06	25	0.26	4,111		32.80
Occidental Negros.....	10	0.08	1	0.01			168	0.60	212	27.75	1	0.13	3,421		35.60
Oriental Negros.....	11	0.11					17	0.24	87	0.31	52	0.97	3,195		32.20
Palawan.....							320	2.56	70	1.00	60	0.84	14,236		51.20
Pangasinan.....	423	1.52					167	3.80	9	0.62	228	1.82	2,504		35.06
Pampanga.....	31	0.41	1	0.01	2	0.02	36	2.30					629		43.80
Rizal.....	9	0.62					25	0.50					5,235		43.20
Romblon.....	57	0.46	24	0.19	53	0.42	36	2.30					4,761		43.00
Samar.....	8	0.07					25	0.50	167	2.30	7	0.06	2,128		35.80
Sorsogon.....	41	0.82					41	0.44	73	0.78	100	0.58	1,008		36.73
Tarlac.....	24	0.25					5	0.20	53	2.12	32	1.28	3,929		36.84
Tayabas.....	4	0.16													
Zambales.....															
Total.....	1,170	0.37	149	0.05	131	0.04	1,596	0.51	5,759	2.00	1,356	0.48	128,497	0.48	39

TABLE G-1.—Summary of deaths caused by communicable diseases occurring during the year 1918.

Province.	An-thrax.	Rate com- pared with total mortal- ity.	Amoe- bic dysen- tery.	Rate com- pared with total mortal- ity.	Bacil- lary dysen- tery.	Rate com- pared with total mortal- ity.	Chol- era.	Rate com- pared with total mortal- ity.	Cere- bro- spinal men- ingitis.	Rate com- pared with total mortal- ity.	Diph- theria.	Rate com- pared with total mortal- ity.	Glan- ders.	Rate com- pared with total mortal- ity.	Hook- worm.	Rate com- pared with total mortal- ity.
		Per ct.		Per ct.		Per ct.		Per ct.		Per ct.		Per ct.		Per ct.		Per ct.
Abra					33	1.96										
Albay					51	0.42	24	0.20								
Ambos Camarines	2	0.02			162	1.64										
Antique					382	6.84	6	0.11			2	0.02				
Bataan					87	2.54	33	1.08	1	0.02						
Batanes	5	0.03			2	0.66										
Batangas	9	0.08	298	2.07			401	2.79	6	0.04	1	0.01				
Bohol	10	0.07	19	0.17			1,021	9.13	3	0.02						
Bulacan	1	0.01			274	2.00	63	0.46	12	0.08	2	0.01				
Capiz	26	0.52			252	3.40	214	2.67								
Cavite					335	6.70	250	2.50								
Cebu	11	0.11			204	2.04	536	2.35	2	0.01	3	0.02			25	0.10
Ilocos Norte					73	0.96										
Ilocos Sur					212	3.01	18	0.26								
Iloilo	21	0.10			2,123	10.90	413	2.14	1	0.02	38	0.14			230	1.16
Isabela					120	2.95					5	0.04	2	0.02	1	0.02
Laguna	5	0.04	285	4.94	195	1.68	37	0.32	17	0.29						
La Union	7	0.12	379	1.94	29	0.50	24	0.42	12	0.06	15	0.08	5	0.03	56	0.34
Leyte	33	0.17	33	1.43			129	0.66								
Mindoro	4	0.17	29	0.50			15	0.60	2	0.03					3	0.05
Mountain Province	2	0.03	227	2.54							4	0.04			37	0.41
Nueva Ecija	3	0.03			13	0.44										
Nueva Vizcaya			737	5.46	615	4.23	150	1.04	5	0.04	6	0.05				
Occidental Negros	9	0.07	254	2.74			206	2.22	3	0.03						
Oriental Negros	9	0.10	254	2.74												
Palawan	2	0.16	42	3.39	1	0.08										
Pangasinan	3	0.02	208	15.45			9	0.09	13	0.17						
Pangasinan	10	0.07	414	1.77	13	0.04	850	2.80			3	0.01				
Rizal			314	2.19	81	0.57	99	0.69			1	0.01				
Romblon					104	6.35										
Samar			405	4.45												
Sorsogon			172	2.34			121	1.64	1	0.01	2	0.02			7	0.08
Tarlac	2	0.03			89	1.35	8	0.12	1	0.01	1	0.01	8	0.10	13	0.18
Tayabas	6	0.05	147	1.30			68	0.60	8	0.07	3	0.02	4	0.03		
Zambales	1	0.03	100	3.00											9	0.27
Total	181	0.07	4,173	1.67	5,672	2.27	4,695	2.00	86	0.03	87	0.03	19	0.01	382	0.16

TABLE G-1.—Summary of deaths caused by communicable diseases occurring during the year 1918—Continued.

Province.	Leprosy.	Rate compared with total mortality.	Measles.	Rate compared with total mortality.	Rabies.	Rate compared with total mortality.	Smallpox.	Rate compared with total mortality.	Syphilis.	Rate compared with total mortality.	Typhoid fever.	Rate compared with total mortality.	Tuberculosis of lungs.	Rate compared with total mortality.	Tuberculosis of other forms.	Rate compared with total mortality.
		Per ct.		Per ct.		Per ct.		Per ct.		Per ct.		Per ct.		Per ct.		Per ct.
Abra											17	1.01	99	6.04	7	0.41
Albay			10	0.08			3	0.02	1	0.05	90	0.74	823	6.92	79	0.66
Ambo Canarines			2	0.02			183	1.97	2	0.01	90	0.74	804	8.69	67	0.72
Antique			3	0.05			106	1.83	4	0.04	111	1.20	565	10.11	4	0.07
Bataan			23	0.67			383	8.99			23	0.67	179	5.24	22	0.64
Batanes											3	0.90	4	1.20	11	3.30
Batangas	1	0.01	13	0.08			374	2.60			180	1.15	193	1.34	51	0.35
Bohol			13	0.10			95	0.85	20	0.17	237	2.65	665	5.96	124	1.11
Bulacan			44	0.32	3		1,138	8.31	7	0.05	232	1.68	1,028	7.51	121	0.88
Cagayan			9	0.10							2	0.02	1,490	6.00		
Capiz			92	1.84	1						170	3.40	720	14.40	34	0.68
Cavite	2	0.02	20	0.19			1,002	10.08			37	0.37	422	4.22	13	0.13
Cebu	10	0.04	91	0.39	1		1,977	8.16	2	0.01	269	1.06	1,446	6.32	239	1.01
Ilocos Norte	1	0.01		0.01			290	3.85	3	0.03	15	0.19	562	7.47	13	0.19
Ilocos Sur					2		654	9.32			22	0.32	783	11.07	11	0.16
Iloilo	2	0.01	156	0.80	2		3	0.01	231	1.13	113	0.48	2,020	10.83	112	0.57
Isabela			2	0.02	1		6	0.12			2	0.05	279	6.83	9	0.22
Laguna			5	0.04	2		1,559	13.44	2	0.02	110	0.94	567	4.81	24	0.20
La Union			17	0.29			16	0.28			100	1.73	397	6.87	1	0.02
Leyte			14	0.08			1,672	8.58	13	0.07	203	1.04	1,413	7.25	229	1.17
Mindoro	3	0.02	4	0.08			19	0.76	10	0.43	40	2.12	128	3.17	80	1.31
Mountain Province	1	0.04	6	0.10	1		27	0.46	3	0.05	16	0.27	183	6.28	84	0.93
Nueva Ecija	1	0.01	12	0.13			164	1.83	3	0.03	302	3.37	562	6.28	80	0.93
Nueva Vizcaya			2	0.06			71	2.41			31	0.69	31	1.05	9	0.30
Occidental Negros			31	0.26	1				2	0.02	100	0.69	1,115	7.74	135	0.94
Oriental Negros	1	0.01	6	0.06	2		48	0.52			6	0.06	456	4.92	3	0.03
Palawan			60	4.40					1	0.08	12	0.96	62	5.00	4	0.32
Pangasinan			24	0.10	1		530	1.98	1	0.08	44	2.24	1,066	9.21	21	0.56
Rizal	1	0.01	34	0.24	15		3,157	22.09	3	0.01	87	0.82	2,149	8.04	99	0.37
Romblon					3		25	1.58			37	0.26	292	2.04		
Samar	8	0.09	20	0.22	2		213	2.34			42	2.56	149	9.10	7	0.42
Sorsogon			17	0.23	5		303	3.03	2	0.02	464	5.10	235	2.58	31	0.34
Tarlac			9	0.12	5		20	0.30			303	4.04	606	8.26	15	0.20
Tayabas			20	0.16			708	6.27			236	3.54	340	5.10	16	0.24
Zambales			35	1.05			22	0.66			91	0.76	1,153	9.93	22	0.18
Total	31	0.01	793	0.32	68		14,466	6	309	0.12	3,862	1.52	22,286	9	1,719	0.70

Province.	Teta- nus.	Rate com- pared with total mortal- ity.	Vario- loid.	Rate com- pared with total mortal- ity.	Vari- cella.	Rate com- pared with total mortal- ity.	Whoop- cough.	Rate com- pared with total mortal- ity.	In- fluenza.	Rate com- pared with total mortal- ity.	Pneu- monia.	Rate com- pared with total mortal- ity.	Total	Rate com- pared with total mortal- ity.
		Per cent.		Per cent.		Per cent.		Per cent.		Per cent.		Per cent.		Per cent.
Abra	65	0.54					3	0.17	290	16.83			459	27.27
Albay	5	0.06					8	0.06	4,074	33.78	9	0.54	5,233	43.68
Amos Camarines	2	0.03					45	0.48	2,413	26.80			3,503	42.00
Aniue							48	0.86	3,885	43.05			5,001	89.00
Bataan	1	0.30							579	16.96			1,330	32.91
Batanes	50	0.35					3	0.90	35	27.30			1,109	32.50
Batugas	87	0.78					42	0.29	2,282	14.68	192	1.34	4,089	28.60
Bohol	148	1.08					293	2.62	3,082	9.72			5,731	51.60
Bulacan	22	0.23					7	0.05	2,894	17.09	152	1.11	3,125	42.37
Capiz	24	0.43					18	0.20	2,132	25.60			2,227	38.60
Cavite	31	0.31			12	0.15	122	2.40	2,014	25.17	31	0.39	3,734	43.60
Cebu	83	0.36					3	0.03	2,199	22.01			4,184	42.00
Ilocos Norte	5	0.06					286	1.25	1,859	8.22	13	0.17	7,032	30.80
Ilocos Sur	81	1.19					3	0.04	1,969	23.54			2,943	36.80
Iloilo	70	0.35					61	0.31	3,113	26.50			4,847	11.00
Isabela	2	0.05					3	0.04	4,724	24.06	43	0.21	10,362	53.30
Laguna	16	0.13					50	1.23	1,063	25.76			1,867	31.36
La Union	5	0.09			1	0.01	5	0.04	1,761	13.46	50	0.34	4,336	35.60
Leyte	32	0.16					46	0.80	1,733	30.92	5	0.09	2,733	54.66
Mindoro	26	1.04			27	0.14	162	0.82	3,475	14.46	53	0.27	7,927	40.80
Mountain Province	33	0.57			1	0.01	2	0.03	720	23.80	2	0.08	1,002	40.08
Nueva Ecija	11	0.12					6	0.07	2,528	8.01			2,914	11.15
Nueva Vizcaya	5	0.04							3,568	38.00			4,787	54.00
Occidental Negros	8	0.09					57	0.47	1,708	38.00			1,838	65.00
Oriental Negros	4	0.32					287	3.99	3,940	27.32			6,968	48.80
Palawan									1,532	20.86	86	0.33	3,307	35.60
Pampanga		1.22					49	0.64	643	55.61	90	7.27	861	68.88
Rizal	328		1	0.01			44	0.16	3,773	34.89	183	1.34	5,430	40.20
Pangasinan			144	1.01	20	0.14	44	0.30	7,975	29.84	71	0.36	12,677	47.50
Romblon									1,510	9.62	51	0.36	5,787	39.56
Samar	72	0.79					195	2.14	126	7.70			453	27.60
Sorsogon	13	0.17					58	0.79	2,041	22.45	211	2.32	3,906	42.96
Tarlac	13	0.20					24	0.36	2,661	36.41			4,004	42.40
Tayabas	34	0.23					22	0.02	2,072	31.08			2,848	40.46
Zambales	7	0.23					85	0.71	2,291	20.28	129	1.09	4,769	42.20
	1,283	0.50	152	0.06	61	0.02	2,078	0.80	1,168	30.54	72	2.16	1,815	34.00
Total									84,171	26.00	1,443	0.58	147,957	46.00

TABLE G-2.—Summary of deaths caused by communicable diseases occurring during the year 1917.

Province.	Anthrax.	Rate compared with total mortality.	Amoebic dysentery.	Rate compared with total mortality.	Bacillary dysentery.	Rate compared with total mortality.	Cholera.	Rate compared with total mortality.	Cerebro-spinal meningitis.	Rate compared with total mortality.	Diphtheria.	Rate compared with total mortality.	Glanders.	Rate compared with total mortality.	Hookworm.	Rate compared with total mortality.	Per ct.
Abra	1	0.06			201	13.87											
Albay					89	1.40	363	5.73									
Ambos Camarines	2	0.04			97	2.07	27	0.57			5	0.10					
Antique					356	10.50	355	10.50									
Bataan					55	3.54			1	0.06							
Batanes					4	2.00											
Batangas	1	0.01	231	3.03					8	0.10			1	0.01			
Bohol	2	0.02	24	0.30				863	10.92		4	0.05					
Bulacan	5	0.80			95	1.39	2	0.03	1	0.01	5	0.08					
Cagayan	2	0.03			482	8.70											
Capiz					330	5.50	301	5.01	1	0.02	7	0.14					
Cebu	2	0.04			174	3.29	36	0.55			10	0.06	1	0.01	66	0.43	
Ilocos Norte	42	0.21			1,108	19.09	611	4.01	9	0.15							
Ilocos Sur					452	9.78					17	0.14	4	0.03	101	0.87	
Iloilo	10	0.08			98	0.80	871	7.60	7	0.23					2	0.06	
Isabela	1	0.03			248	8.30					3	0.06					
Laguna	6	0.11			100	1.88					1	0.03	1	0.01			
La Union	5	0.06	105	3.38	74	2.38					3	0.02					
Leyte	56	0.45	280	2.27			1,350	10.96	23	0.19							
Mindoro					17	1.08											
Mountain Province	1	0.35	60	2.14					19	0.55					4	0.14	
Nueva Ecija	5	0.10	63	2.13	455	9.23					4	0.08			8	0.38	
Nueva Vizcaya			25	0.50	6	0.68											
Occidental Negros	6	0.06	750	6.96	371	3.45	764	13.37	2	0.04	3	0.03	3	0.05			
Palawan	2	0.04	74	1.30													
Pampanga	1	0.21	13	2.67					2	0.02							
Pangasinan	2	0.03	73	1.06					4	0.03			1	0.01	1	0.01	
Rizal	19	0.15	118	0.93	13	0.10					2	0.02			26	0.47	
Rosario	2	0.04	91	1.63							3	0.05					
Romblon					10	1.00	1	0.02			1	0.01			13	0.17	
Samar							49	4.90									
Sorsogon	1	0.01	697	8.83			700	9.10							11	0.22	
Tarlac	1	0.02	97	1.74	265	5.90	429	7.72							2	0.03	
Tayabas	5	0.08	117	1.89					2	0.03	4	0.06	1	0.01			
Zambales																	
Total	177	0.07	2,818	1.12	5,233	2.09	6,815	2.72	96	0.04	72	0.03	13	0.05	244	0.10	

Province.	Lep- rosy.	Rate com- pared with total mortal- ity.	Meas- les.	Rate com- pared with total mortal- ity.	Rabies.	Rate com- pared with total mortal- ity.	Small- pox.	Rate com- pared with total mortal- ity.	Syph- ilis.	Rate com- pared with total mortal- ity.	Ty- phoid fever.	Rate com- pared with total mortal- ity.	Tuber- culosis of the lungs.	Rate com- pared with total mortal- ity.	Tuber- culosis of other forms.	Rate com- pared with total mortal- ity.
		Per ct.		Per ct.		Per ct.		Per ct.		Per ct.		Per ct.		Per ct.		Per ct.
Abra											8	0.55	182	12.56	7	0.48
Albay	1	0.02	11	0.16					1	0.01	15	0.22	703	11.11	80	1.26
Ambos Camarines			4	0.08							20	0.42	607	13.00	43	0.92
Antique			71	2.10							47	1.39	592	17.56	4	0.12
Bataan			4	0.25							6	0.38	104	6.70	9	0.57
Batanes											15	7.50	6	3.00	2	1.00
Batanga			30	0.38	6	0.07			2	0.02	118	1.04	624	8.20	43	0.56
Behol			24	0.30	2	0.02			9	0.11	238	3.10	451	5.71	111	1.40
Bulacan	1	0.01	7	0.11	7	0.11					209	3.30	997	15.64	65	1.04
Cagayan			92	1.70	5	0.09					1	0.01	411	7.50		
Capiz			66	1.98							251	4.18	984	16.40	9	0.15
Cavite	1	0.02	4	0.08					1	0.02	26	0.54	306	6.54	16	0.34
Cebu			49	0.25							237	1.56	1,156	7.60	111	0.73
Ilocos Norte			26	0.42	4	0.06			3	0.05	27	0.46	530	6.90	50	0.86
Ilocos Sur			8	0.16							23	0.48	562	11.92	10	0.21
Iloilo	2	0.01	66	0.57	3	0.02			1	0.03	59	0.43	675	5.84	112	0.97
Isabela			119	3.98					3	0.06	112	2.10	440	7.90	12	0.41
Laguna			3	0.06	3	0.06					27	0.87	304	9.77	19	0.36
La Union	1	0.03					4	0.13		0.03	989	8.04	1,227	9.96	80	0.65
Levite	8	0.07	6	0.05	4	0.03	1	0.01	4	0.03	15	0.93	133	12.04		
Mindoro	1	0.06	24	1.56	1	0.06					5	0.17	96	3.28	60	2.08
Mountain Province			3	0.14							155	3.20	475	9.82	96	0.50
Nueva Ecija			129	2.67	2	0.04	4	0.08			5	0.57	63	7.18	1	0.11
Nueva Vizcaya											108	1.064	1,064	9.78	112	1.04
Occidental Negros	1	0.01	58	0.54	1	0.01	4	0.04	1	0.02			368	5.39	3	0.05
Oriental Negros									3	0.62			88	11.93	22	4.53
Palawan	1	0.21									44	0.63	680	9.73	23	0.42
Pampanga	1	0.01	30	0.44	2	0.03			3	0.03	121	0.95	1,474	11.65	91	0.71
Pangasinan			10	0.08	7	0.06	1	0.01	1	0.02	54	0.97	514	9.27	75	1.35
Rizal			3	0.05	2	0.04					5	0.50	209	20.90	5	0.50
Romblon			3	0.30							253	3.29	260	3.25	73	0.97
Samar	1	0.01	4	0.05	5	0.06	201	2.61		1.99	245	4.41	441	7.94	92	1.64
Sorsogon			113	2.03	4	0.07	39	0.70	111		78	1.56	419	8.40	6	0.12
Tarlac	1	0.02	54	1.10	2	0.04			3	0.04	60	0.97	770	13.23	60	0.97
Tayabas	2	0.03	7	0.11	1	0.01					14	0.84	285	17.10		
Zambales			2	0.12												
Total	24	0.01	1,030	0.46	61	0.02	254	0.10	146	0.06	3,617	1.45	18,199	7.28	1,507	0.60

TABLE G-2.—Summary of deaths caused by communicable diseases occurring during the year 1917—Continued.

Province.	Tetanus.	Rate compared with total mortality.	Varicella.	Rate compared with total mortality.	Whooping cough.	Rate compared with total mortality.	Influenza.	Rate compared with total mortality.	Pneumonia.	Rate compared with total mortality.	Total.	Rate compared with total mortality.
		Per ct.		Per ct.		Per ct.		Per ct.		Per ct.		Per ct.
Abra.....	51	0.80			17	1.17	11	0.75	10	0.69	437	30.16
Albay.....	6	0.12			28	0.44					1,342	21.27
Ambo Camarines.....	2	0.06			57	1.67	28	0.83			853	21.90
Antique.....											1,512	45.40
Bataan.....					4	2.00	1	0.50			179	11.43
Batanes.....	30	0.39			83	1.09	40	0.50			32	16.00
Batangas.....	43	0.64			126	1.59	27	0.34	2	0.02	1,219	20.72
Bohol.....	97	1.53			4	0.06	4	0.06			1,926	24.30
Bulacan.....	33	0.06			34	0.40	26	0.40	7	0.11	1,506	23.80
Cagayan.....	6	0.10			330	5.50	215	3.51	12	0.19	1,086	20.80
Capiz.....	25	3.53			9	0.10	293	1.96			2,504	41.70
Cavite.....	28	0.12			290	1.90	37	0.67			598	12.39
Cebu.....	7	0.12			37	0.67	71	1.21			3,035	19.80
Ilocos Norte.....	104	2.22			44	0.93					1,685	29.03
Ilocos Sur.....	122	1.06			90	0.71	240	2.11	12	0.10	1,203	25.52
Iloilo.....	9	0.30			37	1.57	6	0.20			2,490	24.80
Isabela.....	23	0.43			70	2.25	12	0.38	27	0.50	705	24.15
Laguna.....	3	0.10			323	2.62			1	0.03	612	14.08
La Union.....	23	0.19			1	0.06					4,378	35.57
Leyte.....	11	0.68			1	0.04	10	0.34			223	19.38
Mindoro.....	47	1.63			16	0.32	20	0.04			308	10.59
Mountain Province.....	35	0.70									1,440	18.00
Nueva Ecija.....					91	0.86	129	1.20			75	8.70
Nueva Vizcaya.....	19	0.18			230	4.03	4	0.07	1		2,707	25.10
Occidental Negros.....	11	0.19			7	1.44	6	1.23			403	24.60
Oriental Negros.....	8	1.66			32	0.48	16	0.22	13	0.02	132	26.40
Palawan.....					52	0.41	20	0.15	20	0.30	980	13.60
Pampanga.....	289	2.23			25	0.45	8	0.16	13	0.20	2,290	17.66
Pangasinan.....	50	0.90			6	0.60					15,78	15.78
Rizal.....	3	0.30			191	2.48	10	0.13	4	0.05	290	28.56
Romblon.....	56	0.73			100	1.80	38	0.66			2,469	31.73
Samar.....	8	0.15			21	0.42					1,718	33.50
Sorsogon.....	25	0.50			38	0.61	6	0.09	38	0.61	883	19.60
Tarlac.....	19	0.29			27	1.35					1,222	19.60
Tayabas.....	28	1.40									356	17.80
Zambales.....												
Total.....	1,221	0.45			2,465	1.00	1,240	0.49	224	0.09	45,456	18.00

TABLE G-3.—Summary of deaths caused by communicable diseases occurring during the year 1916.

Province.	Anthrax.	Rate compared with total mortality.	Amoebic dysentery.	Rate compared with total mortality.	Bacillary dysentery.	Rate compared with total mortality.	Cholera.	Rate compared with total mortality.	Cerebro-spinal meningitis.	Rate compared with total mortality.	Diphtheria.	Rate compared with total mortality.	Glanders.	Rate compared with total mortality.	Hookworm.	Rate compared with total mortality.
		Per ct.		Per ct.		Per ct.		Per ct.		Per ct.		Per ct.		Per ct.		Per ct.
Abra.....	1	0.07			173	12.11										
Albay.....					268	3.33	633	7.88								
Ambos Camarines.....	1	0.01			402	5.91	895	13.15			1	0.01				
Antique.....	1	0.05			77	3.55	62	2.87								
Bataan.....			3	1.20	18	0.87	210	11.33								
Batanes.....	3	0.04	252	3.46	2	0.80	88	1.21	1	0.01	17	0.23	2	0.02		
Batangas.....	3	0.06	3	0.06			29	0.58	1	0.02			1	0.02		
Bohol.....	5	0.06			342	4.69	808	10.75	1	0.01	1	0.01				
Bulacan.....	2	0.05			159	4.20										
Cagayan.....	7	0.17			203	5.07	106	2.65			1	0.02				
Capiz.....	1	0.01			244	4.46	242	4.46	2	0.02	2	0.02				
Cebu.....	12	0.10			176	1.40	12	0.10							6	0.05
Iloilo.....					409	9.26										
Ilocos Norte.....					470	11.23										
Ilocos Sur.....	7	0.06			699	6.20	653	6.10	1	0.01	46	0.40	2	0.02	93	0.81
Isabela.....	2	0.16			118	9.44									2	0.16
Laguna.....	4	0.08			215	3.62	186	3.13			1	0.02	1	0.02		
La Union.....	5	0.20			36	1.48										
Leyte.....	5	0.05	57	2.34			340	3.09	2	0.08						
Mindoro.....			812	7.38			23	1.53	1	0.01	3	0.03	6	0.05		
Mountain Province.....	3	0.14	28	1.88												
Nueva Ecija.....	2	0.04	130	5.69			9	0.21							6	0.26
Nueva Vizcaya.....			106	2.56											19	0.36
Ocidental Negros.....	8	0.08	535	5.35	61	0.61	1,293	12.93	1	0.11	2	0.02				
Oriental Negros.....	3	0.08	42	1.07					9	0.09	1	0.03				
Palawan.....	2	0.55	16	4.40												
Pampanga.....	8	0.11	84	1.17												
Pangasinan.....	11	0.08	103	0.83	14	0.11	203	2.33	4	0.05	1	0.01	2	0.02	1	0.01
Rizal.....	4	0.07	88	1.30	52	0.70	396	5.90			2	0.03			72	1.08
Romblon.....	6	0.36			25	2.25	145	13.05								
Samar.....			296	4.73			337	5.39			1	0.02			2	0.04
Sorsogon.....	1	0.02	143	2.96			322	6.67								
Tarlac.....	2	0.05			81	1.42	1	0.03							11	0.28
Tayabas.....	1	0.01	364	5.55			10	0.15			2	0.03	2	0.03		
Zambales.....							57	2.85								
Total.....	110	6	3,066	2	4,250	2	7,062	40	21	0.01	81	0.04	16	0.01	212	0.14

TABLE G-3.—Summary of deaths caused by communicable diseases occurring during the year 1916—Continued.

Province.	Leprosy.	Rate compared with total mortality.	Measles.	Rate compared with total mortality.	Rabies.	Rate compared with total mortality.	Smallpox.	Rate compared with total mortality.	Syphilis.	Rate compared with total mortality.	Typhoid fever.	Rate compared with total mortality.	Tuberculosis of the lungs.	Rate compared with total mortality.	Tuberculosis of other forms.	Rate compared with total mortality.
		Per ct.		Per ct.		Per ct.		Per ct.		Per ct.		Per ct.		Per ct.		Per ct.
Abra		2	0.15								7	0.52	135	10.18	2	0.15
Albay		56	0.69		3	0.03			1	0.01	20	0.24	731	9.10	71	0.88
Ambos Camarines		27	0.57		1	0.01			2	0.02	14	0.25	709	10.42	42	0.61
Antique		9	0.42		1	0.05					45	2.08	489	22.70	2	0.09
Bataan											9	0.43	130	7.04	11	1.59
Batanes		4	1.60								10	4.00	7	2.80	2	0.50
Batangas		22	0.29								48	2.02	608	8.21	42	0.57
Bohol		10	0.20								109	2.18	408	8.22	50	1.13
Bulacan	7	0.08	28	0.37		5	0.06		1	0.01	110	1.47	941	12.68	15	0.20
Cagayan		5	0.10										351	9.30		
Capiz		37	0.92								151	3.77	727	18.17	9	0.22
Cavite	1	0.01	6	1.06		1	0.01		1	0.02	25	0.44	250	4.61	17	0.31
Cebu		98	0.80		1	0.01					189	1.50	902	7.50	108	0.90
Ilocos Norte	1	0.02			2	0.04	10	0.22			23	0.52	228	5.16	83	1.87
Ilocos Sur			28	0.68							25	0.61	455	11.13	9	0.22
Iloilo		31	0.27		1	0.01	5	0.04	1	0.01	53	0.41	1,477	13.08	63	0.54
Isabela									1	0.08	14	0.92	211	16.88	16	0.98
Laguna		23	0.32		1	0.02			2	0.03	123	2.07	560	9.44	17	0.29
La Union		1	0.04		1	0.04					20	0.82	297	12.17		
Leyte		9	0.08		2	0.02	23	0.20	1	0.01	190	1.73	1,122	10.21	129	1.17
Mindoro		2	0.08								10	0.65	222	14.78		
Mountain Province					1	0.04					4	0.16	160	6.96	5	0.22
Nueva Ecija					2	0.04					5	0.58	477	11.64	31	0.75
Nueva Vizcaya											2	0.04	90	10.19	2	0.23
Occidental Negros											63	0.63	1,021	10.21	46	0.46
Oriental Negros		194	1.94		2	0.02	5	0.05	2	0.02	29	0.74	229	5.84	1	0.03
Palawan					1	0.03			1	0.03	34	0.82	34	9.34	10	2.75
Pampanga	1	0.27	60	0.84		1					46	0.64	647	9.05	19	0.27
Pangasinan			3	0.03		0.01					122	0.99	1,476	11.99	80	0.65
Rizal	1	0.01	21	0.32		0.05			1	0.01	50	0.75	6,22	6.22	100	1.50
Romblon	1	0.09	1	0.09		0.03					22	1.98	93	8.37	10	0.90
Samar			1	0.02					4	0.36	22	2.05	224	3.58	68	1.08
Sorsogon			25	0.51		0.26	201	3.21	1	0.02	188	3.89	342	7.09	80	1.65
Tarlac			2	0.05		0.03					58	1.45	412	10.30	18	0.46
Tayabas	1	0.01	2	0.03		0.03	6	0.09	14	0.21	99	1.51	702	10.71	42	0.59
Zambales			1	0.05							56	2.85	268	33.40		
Total	13	0.01	708	0.40	48	0.03	250	0.14	35	0.02	2,070	1.21	17,550	10	1,200	6

Province.

Tetanus.	Rate compared with total mortality.	Varioloid.	Rate compared with total mortality.	Vario-cell.	Rate compared with total mortality.	Whooping cough.	Rate compared with total mortality.	Influenza.	Rate compared with total mortality.	Pneumonia.	Rate compared with total mortality.	Total.	Rate compared with total mortality.
	Per ct.		Per ct.		Per ct.		Per ct.		Per ct.		Per ct.		
Abra.....	36	0.44				1	0.07	31	2.33	1	0.07	353	26.60
Albay.....	13	0.19				52	0.64					1,871	23.35
Antique.....	1	0.05				59	0.86					2,166	36.00
Bataan.....						37	1.71	29	1.34	1	0.05	754	35.70
Batanes.....	2	1.80										378	20.41
Batangas.....	17	0.23				3	1.20	3	2.02			36	14.40
Bohol.....	53	1.07				82	1.12	2	0.02	17	0.25	1,202	18.20
Bulacan.....	141	1.90				87	1.75	44	0.88			798	17.20
Cagayan.....	3	0.08				7	0.09	20	0.27	10	0.13	2,448	32.70
Capiz.....	1	0.02				10	0.20	2	0.06			532	14.60
Cavite.....	18	0.33				143	3.57	87	2.17	1	0.02	1,474	32.50
Cebu.....	11	0.09				14	0.25					1,474	32.50
Ilocos Norte.....	4	0.09				207	0.17	549	4.50			821	18.14
Ilocos Sur.....	110	2.69				25	0.59	41	0.92			2,271	18.70
Iloilo.....	38	0.13				11	0.26					826	18.70
Isabela.....	6	0.48				112	0.99	196	2.10	14	0.12	1,108	27.12
Laguna.....	25	0.42				51	4.08	4	0.32			3,492	31.36
La Union.....	1	0.04				21	0.35			19	0.32	425	21.25
Leyte.....	25	0.23				47	1.93	2	0.08	2	0.08	1,198	20.20
Mindoro.....						313	2.85					471	18.84
Mountain Province.....	36	1.61						45	1.95			2,981	27.15
Nueva Ecija.....	5	0.09				12	0.29					284	19.88
Nueva Vizcaya.....												392	17.07
Occidental Negros.....	4	0.04										664	16.64
Oriental Negros.....	10	0.26				68	0.68	85	0.85			103	12.00
Palawan.....	3	0.82				151	3.85	9	0.30	6	0.15	3,398	33.98
Pampanga.....						2	0.55	3	0.82	4	1.09	483	12.80
Pangasinan.....	221	1.79				31	0.43			23	0.22	1,127	15.60
Rizal.....	25	0.39				60	0.58	41	0.33	53	0.43	2,198	17.28
Romblon.....						48	0.68	23	0.38	22	0.38	1,320	19.90
Samar.....	33	0.53				2	0.18					309	27.88
Sorsogon.....	13	0.26				111	1.77	63	1.31	3	0.05	1,405	12.48
Tarlac.....	21	0.52				37	0.76					1,228	25.40
Tayabas.....	23	0.35				63	1.57	3	0.04	50	0.76	670	17.90
Zambales.....	48	2.40				73	1.11					1,391	20.46
						13	0.65					443	22.15
Total.....	948	0.51				1,953	1.10	1,282	0.71	226	0.13	4,101	23

Cerebro-spinal meningitis.—The Province of Samar alone reported 123 deaths from this disease of the 216 which is the total reported. Cerebro-spinal meningitis is very seldom registered in the Philippines, undoubtedly the deaths reported in Samar are due to erroneous diagnoses. This opinion is sustained by the fact that no deaths were registered from said disease in said province during the years 1916, 1917, and 1918.

Diphtheria.—From the deaths reported as diphtheria in the Province of Samar, it can be deduced that such disease is not frequent nor prevalent in the provinces because its mortality is decreasing if compared with the deaths reported in 1916, 1917, and 1918 from said disease.

Dengue.—There is no doubt that the number of deaths reported as dengue should be counted as influenza, especially those reported from the Province of Samar, which amount to 80 per cent of the total deaths reported from influenza.

Hookworm.—It is not possible to accept (if it is not due to erroneous diagnoses) such a large number of deaths attributed to hookworm, as reported. Neither the Province of Capiz, Iloilo, or Samar, in which the large number of deaths from said disease was reported, have laboratory facilities to make examinations upon which to base such diagnoses. Probably in these diagnoses are included all deaths caused by variable infections and intoxications in which intestinal parasites are expelled by natural expelling agents of the human body before the patient dies, because it has been found that the municipal secretaries as well as many of the assistant sanitary inspectors call hookworm *intestinal vermin*, and therefore all deaths reported by relatives of deceased who had intestinal parasites are diagnosed as due to hookworm.

Measles.—The number of deaths reported from this disease has been notably decreased, if compared with previous years. Measles never was registered as a general epidemic in the provinces of this division, but was sometimes registered only as an outbreak in a determinate locality.

Syphilis.—This disease is not very frequent in the provinces. From a personal inspection made by the chief of the division in the Province of Samar, it can be deduced that many of the deaths attributed to syphilis were really tuberculosis of the bones or ulcerative yaws.

Typhoid fever.—The number of deaths reported as due to typhoid fever remains practically the same as in the two previous years and at the same rate as compared with the total mor-

tality. This fact means that the same circumstances that caused the prevalence of this disease in the previous years also existed during the present. This is a true affirmation.

No special measures were taken in the provinces to prevent and suppress the causes that contributed to the spread of this disease. Generally speaking, no sanitary measures have been taken for the control of milk venders, the sale of vegetables, for making more extensive the provision of safe water supplies, for the disposal of excreta, and for carrying on a campaign against flies.

More extensive use of antityphoid vaccine has been ordered but this measure serves only as one of the potent factors for the suppression of a running epidemic, but has no permanent value without the other measures mentioned.

A campaign against typhoid carriers was undertaken during the year and to the end to obtain the most possible satisfactory results in the detection of this disease, the following circular was issued with regard to more accuracy in the diagnoses:

PHILIPPINE HEALTH SERVICE.

MANILA, September 20, 1919.

CIRCULAR }
R-69. }

To all medical officers of the Philippine Health Service:

The following body of a letter received from the Bureau of Science is transcribed herewith for the information of all concerned:

"In order that we may be able to secure satisfactory results in the examinations made for typhoid fever carriers, it is respectfully suggested that in case where the Widal reaction is positive and specimens of stools be submitted for isolation of typhoid bacilli, the following procedure be followed:

"The subject should be given a cathartic, preferably elaterin in doses of 0.1 to 0.2 of a grain. When given in the evening it usually produces one bowel movement the next morning. The stool should be collected in a bed pan and from the liquid portion a test tube containing glycerin salt solution should be inoculated with an amount equivalent to about one-half of the volume of the solution in the tube. The tube should then be shaken to mix its contents and submitted to this Bureau for isolation of bacillus typhosus.

"The glycerin salt solution tubes will be furnished by the Bureau of Science. Elaterin can be obtained from the larger drug stores such as the Botica Boie."

It is requested that medical officers of the Philippine Health Service be guided accordingly when submitting specimens of stools for isolation of typhoid bacilli to the Bureau of Science.

(Sgd.) V. JESUS,
Acting Director of Health.

Tuberculosis.—Under this heading are included all forms of tuberculosis reported, but it should be stated that 95 per cent of deaths attributed to tuberculosis is of the pulmonary form.

The yearly increase already mentioned in the report of the past year continued during the year, because the causes remained the same.

Some provinces have taken measures with the view point of reducing the number of deaths registered by tuberculosis. The Province of Bulacan is at the head of this movement and from the annual report of its district health officer the following is quoted:

Tuberculosis in the province is mostly of the pulmonary type. A campaign of education as to prevention and care in its incipient stage may be undertaken by the district health officer, district nurses and presidents of sanitary divisions thru lectures and conferences, both in private and in public, especially in the schools. The service has a projection apparatus for illustrating lectures and one district nurse and a sanitary inspector may be and should be permanently detailed for this important work to go to each town in the province to give illustrated lectures and conferences, treating on tuberculosis and other communicable diseases.

Placards, such as those of the Antituberculosis Society, which are distributed upon request, may be posted in public places, such as markets, municipal buildings and schools, and municipal ordinance for requiring spittoons in these public places should be passed and enforced by the municipal councils. It is also noted that in the *tiendas* of "*sarisari*" found scattered all over the provinces, the ready-made products for immediate consumption, such as bread, cakes, preserves, etc., are almost always covered or supplied on printed paper or in printed envelopes which in most cases may be the newspaper or book pages used by an advanced tuberculosis patient. Municipal sanitary ordinances against this practice should be passed and enforced in each municipality and if opposition is encountered from a financial standpoint of the ordinance, the banana leaves may be accepted (?) as substitutes for the printed paper. The insubstantial play-game of children known as *buga** and the like, should be prohibited, and of no less importance, there should be an ordinance prohibiting the use of "*agua bendita*" (sanctified water) in the common basin or receptacle in Catholic churches, to be substituted by the sanitary drop-method said to be in vogue in advanced countries. It is undoubtedly slow and tedious to introduced these reforms, still a district health officer, with the aid of a loyal self-sacrificing personnel, would be and should be able to introduce them, if he is given time to do it.

It is not desired to make other suggestions with regard to the control of this disease and the reader is referred to the considera-

* *Buga* is one of the most common games of the Filipino boys in which a small marble is put into and blown out of the mouth to knock another marble out of a circular boundary line. The marble which is blown out, is again taken from the ground, put into the mouth, and blown out again.

tions already given on pages 108 and 109 of the Annual Report for 1918.

Summary.—Much could be and should be done in the provinces toward reducing the number of deaths registered from avoidable communicable diseases, but the custom of the people cannot be changed in one year.

The celebration of many fiestas which still remains customary in the small barrios, play an important part in the spread of communicable diseases and having been so understood by the district health officer of Nueva Ecija, a letter was sent to all municipal authorities of said province and a circular with reference to this matter was issued.

The letter and circular read as follows:

"The Municipal Presidente of.....
Thru the Hon. Provincial Governor.

SIR: For the good of the Public Health Service of Nueva Ecija and to prevent and automatically control dangerous and communicable diseases, such as cholera, diarrhoea, dysentery, typhoid fever, smallpox, measles, etc., and the spread of intestinal infection, I have the honor to request your coöperation by supplying us with a list of dates of fiestas of your municipality, barrios and other places and to advise us of the possible changes of dates of said fiestas.

The importance of this plan needs no comment, the realization of which strongly impresses our minds only when we think that a fiesta constitutes a big crowd of people from many parts of the province, who may be positive cases or carriers of one of these dangerous communicable diseases and intestinal infections. In fact, a fiesta is a sure starting point of any epidemic of the devastating type.

The public health of Nueva Ecija wishes to have an automatic control and immediate prevention of the appearance of the above diseases. As stated above, fiestas are possible sources of epidemics, this office should have a complete calendar of dates of fiestas in the whole province so that personnel of the service may be ordered from time to time to said fiestas to enforce sanitary regulations.

Very respectfully,

(Sgd.) TEOFILO CORPUS,
District Health Officer.

CIRCULAR No. 31.

To all presidents of sanitary divisions and provincial assistant sanitary inspectors of Nueva Ecija:

Educational campaign during the fiestas.—Town or barrio fiestas, people old or young, poor or rich, and in all walks of life, who come from many different places, patronize fiestas.

It may be that a smallpox case attends the fiestas. May be a cholera contact goes also. May be a convalescent from mumps, whooping cough, diphtheria, typhoid fever, malaria, influenza, measles, varioloid, varicella, etc. also take part—who knows?

This may happen, why not. The ignorant people doubt this particular fact. Is this not a sure time and place for the starting-point of an epidemic of

any of these dangerous communicable diseases? In fact there should be a warning at every fiestas written in big letter: "*Danger here from any contagious disease.*"

Are the presidents of sanitary divisions and provincial assistant sanitary inspectors on the lookout for this danger? Would measures be taken to protect the health of the people during this time? Would they help?

Behold the undoubted importance of educational campaign. You, officers and employees of the public health service of Nueva Ecija, would you volunteer to undertake such kind of work? Would you lose the opportunity to stand amidst the crowd at a fiesta and give short talks on such topics as "cleanliness," "infant feeding," "expectant mothers," or on any other topic dealing with the many dangerous communicable diseases?

Remember the great work of the educational campaign during any fiesta, or at any other suitable time of the year in your respective divisions. Take part in it! Demonstrate your interest in it! When this is done, then and then only, could it be said that every health officer and employees of Nueva Ecija is doing his bit in the great patriotic work of public health!

Make educational campaign stand high! All hail!

(Sgd.) TEOFILO CORPUS,
District Health Officer.

It is evident that the increase of the number of deaths attributed to the communicable diseases of the intestinal tract occurred during the months from April to July. This fact could in part be explained because in said months a real plague of flies was developed every year, due not only to the favorable climatological conditions that prevailed in the said period, but also to laxity in the proper disposal of refuse and excreta. In July the great rains and consequent floods naturally destroyed the breeding places of flies, carrying away the refuse, manure and excreta, and therefore in August or September deaths registered from the mentioned communicable diseases decreased.

Forty per cent of the total deaths registered in the present year was due to communicable diseases and 36 per cent to the most common diagnoses used, making a grand total of 76 per cent from diseases more or less preventable. If it is appreciated that 50 per cent of the 76 per cent of deaths registered was easily avoidable, it may be concluded that if the sanitary measures recommended by sanitary science were enforced in the municipalities 153,755 souls could have been saved from death in the year 1919, and especially lives of infants.

IV.

EPIDEMICS.

Cholera.—(See Table H.) Since the year 1913 cholera has not disappeared from the provinces of the Archipelago, but the epidemic of the present year can only be compared with that registered in the year 1908 by its gravity.

At the close of the year 1919, fifteen provinces remained infected with cholera and the Province of Pangasinan was the one most seriously attacked. This province showed a decrease in the number of cases from January, 1919 to May, 1919, but in June a recrudescence of the epidemic was noted and in August more than 100 invasions were registered daily. Of the total of 25,593 cases reported and 18,052 deaths registered, 6,730 cases with 5,013 deaths occurred in this province.

Sixteen provinces were infected in January. In February, six of the sixteen infected were declared free of infection and a new one invaded. In August 26 of the 36 provinces embraced by this Division were infected and at the end of the year only fifteen remained infected.

The prevalence and persistence of cholera in the provinces was indubitably due to several factors. For some of them the health officers should be blamed and the people for the others.

Several health officers did not lend importance to the first cases registered, believing that the outbreak would stop spontaneously in spite of no measures taken.

The people did not cooperate with the sanitary authorities. The first cholera case is usually reported late or not at all on account of the custom of people to diagnose this disease as one similar to simple gastro-intestinal disturbances and besides this, the tendency of the majority of the people is to conceal the cases in order to avoid quarantine, hospitalization and disinfection.

Sometimes the case is concealed in order to celebrate the burial with ostentation. In this kind of burial food for all the relatives and friends attending the burial is prepared frequently by the same persons who attended the patient, and as it is the custom of the ignorant people to eat with their fingers, not having table sets, they transmit the infection with their hands to the food, rice (*morisqueta*) and drinking water, thus infecting others. It has been observed, not only once but many times, that after these kinds of burials with meals prepared in this way many persons attending them have been attacked with cholera.

The quarantined house cannot be strictly guarded, not only on account of lack of police force in the municipalities, but because sometimes the police itself permits the access of contact to the persons quarantined.

The vomits of the deceased and patients are washed in the rivers and surface wells from which the people take their drinking water, and it has been noted with frequency that the closure or disinfection of a surface well has been a sufficient measure to stop an outbreak of cholera in a given locality.

Province.	Month.						Total.	Population.	Morbidity rate per 100,000 population.	Num-ber of isola-tion houses estab-lished.	Cases hospi-talized.			Fatality rate.					
	October.			November.							December.			C.	D.	C.	D.	Among hos-pital-ized.	Not hos-pital-ized.
	C.	D.	C.	C.	D.	C.					D.	C.	D.						
Abra																			
Albay	295	229	279	212	43	32	665	501	269,333	247.00									
Ambos Camarines	82	61	55	26	35	30	662	482	258,554	307.00	3	152	42	27.60	86.30				
Antique	13	9	34	27	134	114	241	176	139,812	180.00					73.00				
Bataan							17	14	47,995	35.00					82.20				
Batanes																			
Batangas	112	80	40	31	3	3													
Bohol	23	20	20	17	13	12	1,463	776	361,546	409.00					53.00				
Bulacan							289	218	369,866	80.00					75.70				
Cagayan	134	98	145	96	118	79	667	473	251,923	300.00	1	93	44	47.31	70.91				
Capiz	19	17	6	5			410	284	161,909	262.00					67.70				
Cavite	33	22	15	12			136	93	228,811	60.00					68.00				
Cebu	42	42	14	9			356	239	134,678	265.00					67.13				
Ilocos Norte	265	228	39	37	2	1	1,475	858	938,274	153.00	1	4	239	33.40	82.20				
Ilocos Sur	74	58	3				877	673	233,789	376.00					76.70				
Iloilo	133	111	71	42	11	7	1,451	963	234,548	670.00					66.40				
Isabela	69	44	159	79	28	23	865	694	465,563	185.00	1	60	43	65.14	80.23				
Laguna	46	40	90	5	11	7	256	136	79,711	321.00	5	141	51	36.17	73.04				
La Union	7	7	1	1			907	755	162,030	559.00					83.00				
Leyte							1,326	980	140,829	942.00	4	70	40	57.20	74.06				
Mindoro	134	92	77	31	21	12	41	18	599,918	101.00					44.00				
Mountain Province	50	29	11	4	10	8	562	266	55,210	1,018.00					47.30				
Nueva Ecija	2	2	24	14			171	91	189,566	483.00	9	5			38.60				
Nueva Vizcaya							803	581	135,996	590.00				72.30					
Oriental Negros																			
Palawan	184	130	80	61	51	26	514	379	307,198	168.00					73.70				
Pampanga							215	162	194,821	187.00	3	133	95	71.40	81.70				
Pangasinan																			
Rizal	34	28	81	25	25	17	1,169	901	226,851	497.00					77.60				
Romblon	77	35	26	11	3		6,730	5,013	463,234	1,465.00	4	316	117	37.60	76.30				
Samar							1,128	680	149,894	454.00	9	157	141	90.00	56.00				
Sorsogon																			
Tarlac	221	149	183	123	100	74	15	7	311,939	5.00					46.00				
Tayabas	84	65	8	7			628	423	194,930	322.00	1	38	13	46.50	69.60				
Zambales	57	41	35	25	26	11	541	392	180,925	302.00					72.45				
	12	11					974	786	257,652	378.00	21	620	582	93.90	57.70				
							39	38	60,821	55.00					97.00				
Total	2,118	1,688	1,461	910	694	456	25,593	18,052	7,998,684	321.90	81	2,560	1,443	56.00	76.00				

But principally, the cause of the prevalence and reappearance of outbreaks of cholera in the provinces every year is without doubt due to the lack of sanitary disposal of excreta in the provinces and it is believed that conditions like this with reference to this matter will always be a menace to the health of the provinces.

As soon as cholera cases reappeared in the provinces, the following circular was issued:

PHILIPPINE HEALTH SERVICE.

MANILA, June 12, 1919.

CIRCULAR }
R-45. }

To all district health officers and presidents of sanitary divisions:

The attention of all concerned is hereby called to the fact that cholera is actually epidemic in some provinces of Luzon and the Southern Islands. A marked tendency towards the spreading of the disease throughout the rest of the Archipelago is very apparent, so that the utmost vigilance and precautions against the introduction of the epidemic in the provinces not yet invaded becomes urgent.

The district health officers are directed to exercise the closest sanitary supervision of the towns located at the boundary of their respective districts at the same time to provide preventive measures, rules, and regulations for the sanitary control and supervision of public places, such as tiendas, restaurants, hotels, tenement houses, and railway stations where the congregation of people is usually very great.

The attention of the district health officers is invited to the fact that the careful study of the weekly mortality and morbidity reports as required by Circulars Q-84 and R-21 shall be of great help for them to easily detect the beginning of any outbreak of cholera or similar other acute epidemic and communicable disease in their district. Any unreasonable or sudden increase of the number of death within one week shall warn the health officers of the possible appearance of an epidemic. To this end the district health officers and presidents of sanitary divisions are directed to exercise the closest possible scrutiny whenever examining death certificates and dead bodies, giving particular attention to those cases not having been treated by a physician during the illness or where the personal data, or the length or duration of illness and other pertinent data point to the suspicion that death was due to cholera. Close attention should be given to the investigation of deaths from intestinal diseases in which the diagnosis is undetermined.

In this connection the district health officers are hereby directed to comply with the provisions of Circular N-48, dated April 22, 1915, relative to the information of dangerous communicable diseases, this circular having been mentioned also in Circular Q-29, dated May 24, 1918.

(Sgd.) V. JESUS,
Acting Director of Health.

The sanitary personnel in the provinces infected was mobilized and this force was directed to locate the cases by means of house-to-house inspection.

Free distribution of sulphuric acid lemonade among the inhabitants of the barrios infected was made. Washing of hands was enforced in markets and public schools.

The searching and control of cholera carriers was almost a failure in the provinces due to the lack of laboratory facilities.

In several instances during the epidemic emergency hospitals were established either in the poblacion or barrios or if emergency hospitals could not be established, isolation houses took their place. Of the 81 hospitals established during the epidemic, one-half were emergency hospitals and one-half isolation houses.

The emergency hospitals were maintained by funds furnished the provinces as an aid by the Central Office.

As soon as the emergency hospitals or isolation houses were established, the cases began to decrease and the epidemic was more easily controlled.

As a proof that the contact is the principal cause of the spread of the cholera epidemic in the Philippine Islands, not only the rapid decrease of cases when an emergency hospital or isolation house is established can be cited, but the following:

Cases of cholera were registered in the Canlubang Sugar Estates located in the municipality of Calamba, Province of Laguna. The laborers of this plantation live in a very comfortable house with sanitary disposal of excreta and with safe water supply. As soon as the first onset of the disease was registered, though in its premonitory period, the cases were transferred to the hospital of the Estate, avoiding in this manner contact with other persons living in the same house. The persons living with them were subjected to a very careful and scientific disinfection as well as the house, and by the application of this measure cases were not usually repeated in the same house, but in others.

Venders from Calamba, which municipality was infected, brought daily their products to the Estate to be sold to the laborers, and it was suspected that they might be carriers of infection into the Estate and therefore all persons coming from Calamba were required to wash their hands in a disinfecting solution (bichloride of mercury, 1:100,000) before entering the Estate, so that with this simple precaution no more cases of cholera were registered among the inhabitants of the plantation.

This showed that venders brought the infection on their hands and that through contact the laborers of the plantation were infected.

In the eradication of the epidemic in the provinces superintendents of public schools coöperated efficiently with the health officers.

The following circular shows an example of said coöperation which in general was given by all the school teachers of the provinces infected:

PHILIPPINE HEALTH SERVICE.

MANILA, August 19, 1919.

CIRCULAR }
R-65. }

To all district health officers:

The Director of the Bureau of Education has sent to the Honorable, the Secretary of Public Instruction, a letter which reads as follows:

"I have the honor to quote for your information the following paragraph from the monthly report of the Division Superintendent of Schools for Mindoro which is illustrative of the excellent spirit shown in combating a cholera epidemic, among the school officials, health officials, municipal officials, and the people.

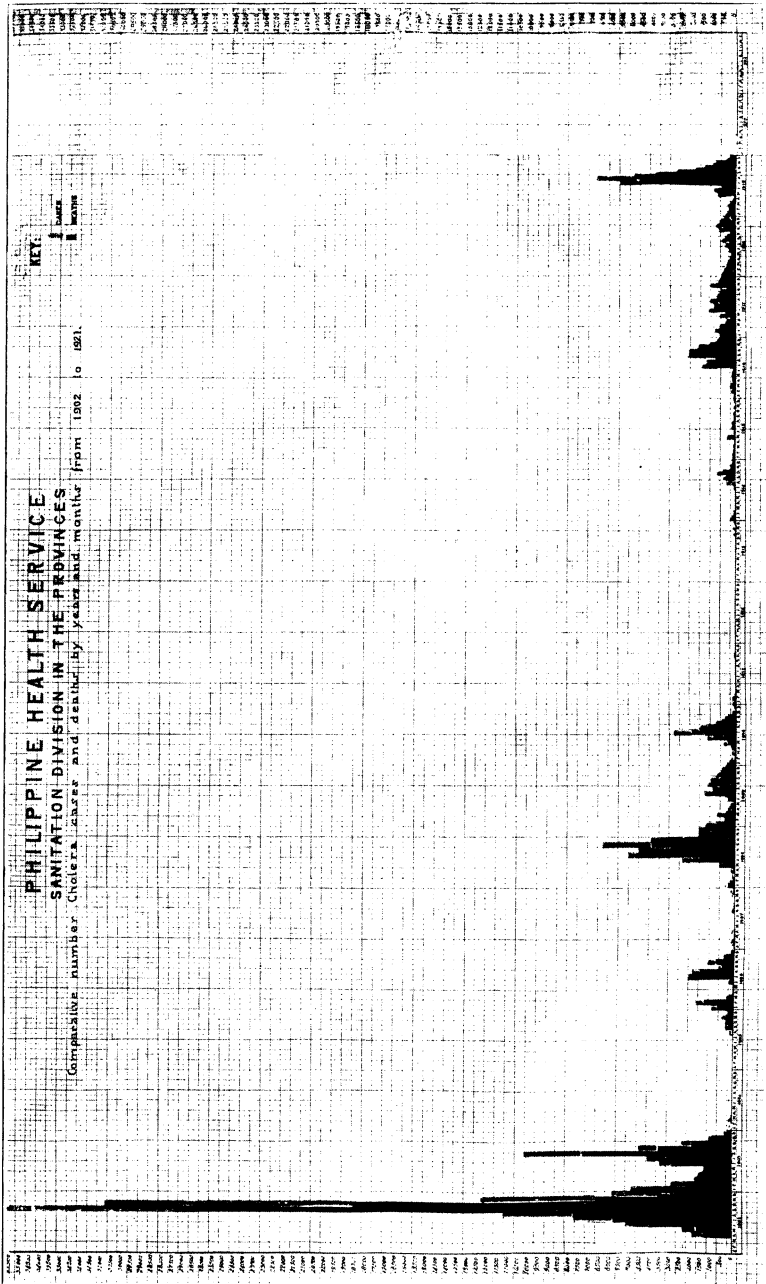
"While in the district cholera epidemic broke out in Tilic in alarming proportion, there being from 6 to 10 cases daily followed by 4 to 8 deaths. Two or three days later the disease spread to the barrio of Maliig. At both places, the schools were closed as the children were afraid to come to school. The teachers were ordered to place themselves under the health officer in charge and help check and bring the epidemic under control. I was at Vigo, a barrio located between Tilic and Maliig, with the division industrial and academic supervisors, all day of the 17th and with the help of the supervising teacher, vice-president and other municipal officials taught the people of the barrio the precautions they should take to prevent the spread of the disease in their barrio. This was done in a mass meeting held on the evening of the 16th and during the 17th visits were made in the homes to see if the instructions given the evening before were being followed. Houses and yards were cleaned; garbage, refuse of all kinds, etc., burned; drinking water boiled; spoons, forks, knives, plates, cooking utensils, etc. washed in boiling water; food cooked and protected from flies; and a pit for every house dug and gradually covered with sand and lime as same is used, with very gratifying results. Up to the hour we left Vigo on the evening of the 17th not a single case occurred in Vigo and the epidemic in Tilic and Maliig was seemingly under control, there occurring no more cases."

It is shown from the statement made by the Division Superintendent of Schools for Mindoro the important part which an excellent spirit of coöperation plays in the eradication of epidemics.

PHILIPPINE HEALTH SERVICE SANITATION DIVISION IN THE PROVINCES

Comparative number of Cholera cases and deaths by year and month from 1902 to 1921.

KEY:
Cases
Deaths



The work performed by the combined authorities mentioned by said official with reference to controlling cholera outbreak in Tilic, Mindoro, is a praiseworthy example deserving imitation; it is a procedure which should always be borne in mind by the officers of the service with a view to placing it into practice at all times, and therefore health officers of other localities are expected to exercise all their ability and prudence for securing the co-operation of all concerned in order to obtain similar results in their work."

This office hopes to hear the repetition of the manner in which cholera was stamped out at Tilic, Mindoro, which was through the altruistic and patriotic behavior of the school, municipal and health authorities of said locality, in other localities and health districts at present infected with cholera and dysentery, thru the efforts also of the respective health officers.

(Sgd.) V. JESUS,

Acting Director of Health.

Various reports from the district health officers indicate that the teachers have rendered excellent services in connection with the cholera epidemic.

The excellent results obtained with the preventive anticholera vaccination in the Balkans and Egypt in the past year compel us to try the diffusion of this preventive measure among the most accessible population of the provinces during the next year.

As an illustration of the appearance and march of the cholera epidemics in the provinces embraced by this division, the following chart is inserted, showing diagrammatically the number of cases and deaths of cholera reported since the year 1902.

Dysentery.—(See Table H-1.) At the beginning of the year 28 provinces were infected with bacillary dysentery.

The district health officers reported many cases as amoebic dysentery, but after a careful investigation and owing to the appearance, extension, duration, and termination of the disease, this office concluded that more than 95 per cent of the cases reported as amoebic dysentery were really cases of bacillary dysentery.

No reason can be given with which to explain the little attention that the majority of the district health officers, as well as the people, lend to this disease and why they do not consider bacillary dysentery as a serious epidemic from a sanitary standpoint. No sanitary measures are taken at the appearance of the first cases and the majority of cases are only detected when the certificates of death are registered.

The morbidity and mortality from dysentery in the year 1919 were higher than those of cholera, and the high fatality rate of dysentery is due to the fact that cases only became known at the time the death certificates were being requested, and therefore each case was reported as one case and one death.

TABLE H-1.—*Tabulation showing outbreak of dysentery.*

Province.	Month.											
	January.		February.		March.		April.		May.		June.	
	C.	D.	C.	D.	C.	D.	C.	D.	C.	D.	C.	D.
Abra	2	2	1	1	5	2	47	20	1	38	1	10
Albay	40	2	25	7	89	43	22	10	62	34	78	24
Amos Camarines	11	9	7	6	7	3	22	30	30	16	35	42
Antique	1	1	24	13	27	14	5	5	10	63	46	62
Bataan	9	9	5	5	7	6	5	8	27	114	140	37
Batanes	1	1	12	1	17	1	17	8	15	58	60	47
Batangas	12	12	12	10	5	5	10	8	29	62	29	28
Bohol	2	1	3	3	5	1	10	2	39	33	1	27
Bulacan	18	18	20	20	19	19	27	12	2	212	337	138
Cagayan	14	6	7	6	1	1	11	19	3	19	56	47
Capiz	36	15	48	30	100	53	34	21	482	302	169	86
Cavite	4	4	20	7	9	5	5	7	30	42	46	28
Cebu	22	11	64	52	47	46	23	3	149	170	131	109
Ilocos Norte									37	42	32	26
Ilocos Sur	1	1	1	1	1	1	22	64	7	856	574	184
Iloilo	80	88	65	60	81	69	81	1	39	31	5	7
Isabela									4,670	213	140	32
Laguna	26	23	18	18	13	11	15	13	20	419	957	438
La Union	1	1	1	1	6	6	4	4	2	67	61	34
Leyte	33	26	28	27	29	29	49	23	18	303	177	151
Mindoro	23	11	18	6	24	4	11	4	26	51	38	84
Mountain Province			9	1	27	1	20	7	13	12	11	16
Nueva Ecija	11	6	11	6	3	4	3	2	8	43	20	19
Nueva Vizcaya	4	4	2	2	3	3	3	1	33	362	170	49
Oriental Negros	53	48	108	75	117	100	61	43	1	3	1	1
Occidental Negros	29	29	14	14	7	7	13	13	84	319	393	201
Palawan			6	1	5	2	6	2	11	50	61	175
Pampanga	20	17	8	8	6	6	13	12	18	20	7	43
Pangasinan	52	32	29	25	55	15	21	18	34	383	326	16
Rizal	22	14	16	7	26	13	10	10	511	397	1,392	343
Romblon	6	6	9	9	15	10	9	9	1,303	969	1,183	197
Samar	36	8	7	6	20	18	45	23	12	119	120	90
Sorsogon	36	22	35	16	41	22	102	67	17	47	22	10
Tarlac	14	2	3	3	3	3	2	5	36	213	88	43
Tayabas	22	16	3	3	16	11	13	3	107	160	118	89
Zambales	13	11	16	16	2	2	3	3	182	152	152	46
Total	692	445	669	468	817	525	678	451	598	7,945	5,653	3,081
									4,191			2,004

Province.	Month.						Total.	Population.	Morbidity rate per 100,000 population.	Num-ber of iso-lation houses estab-lished.	Cases hospitalized.			Fatality rate.	
	October.		November.		December.						C.	D.	Among hos-pital-ized.	Not hos-pital-ized.	
	C.	D.	C.	D.	C.	D.	C.	D.							
Abra	4	3	2	2	70	58	68,728	102.00					Per ct.	82.86	
Albay	75	27	59	35	791	334	269,333	301.00							
Ambos Camarines	26	20	22	18	278	254	253,554	188.00						68.76	
Antique	20	34	11	21	432	381	139,812	324.60						84.30	
Bataan	7	6	8	7	226	214	27,995	470.00						90.30	
Batanes	17	1	7	1	199	8	8,358	2,380.00						3.00	
Batangas	52	43	36	32	880	794	361,546	238.00						90.13	
Bohol	16	10	9	9	166	131	369,886	38.00						81.70	
Bulacan	17	7	16	8	1,076	599	251,923	427.00						55.66	
Cagayan	20	7	16	14	234	113	161,909	165.00						48.20	
Capiz	48	34	36	21	845	582	228,811	369.00						68.80	
Cavite	5	5	12	10	209	142	134,678	156.00						66.70	
Cebu	113	90	128	107	2,108	1,485	938,274	225.00						70.00	
Ilocos Norte					77	18	233,789	34.00						23.30	
Ilocos Sur	9		2	2	287	200	234,548	132.00						61.30	
Iloilo	386	262	167	112	3,237	2,716	465,563	693.00						83.93	
Isabela															
Laguna	12	12	9	9	304	277	162,030	186.00						91.10	
La Union	41	18	6	6	822	465	140,829	582.00						56.40	
Leyte	14	14	17	11	308	301	599,918	61.00						82.00	
Mindoro	32	7	32	23	59	168	55,210	435.00						70.00	
Mountain Province	14	3	18	5	326	96	238,358	490.00		1	7	2	0.01	40.00	
Nueva Ecija	3	3	8	2	989	418	135,996	727.00							
Nueva Vizcaya	3	1	2	2	21	21	27,428	766.00						42.00	
Ocidental Negros	164	139	117	99	1,944	1,574	307,198	638.00		1	21	21	100.00		
Oriental Negros	37	37	23	23	322	322	194,821	163.00							
Palawan	6	4	7	4	155	49	33,075	447.00						81.00	
Pampanga	14	12	6	6	5	2	226,859	453.00						100.00	
Pangasinan	60	43	67	52	1,067	870	463,234	840.00						31.70	
Rizal	46	17	21	16	3,893	2,782	149,894	437.00		1	7	4	57.20	79.20	
Romblon	21	4		2	663	397	111,063	274.00						71.00	
Samar	149	48	33	15	163	111	311,939	257.00						68.10	
Sorsogon	154	102	128	92	803	332	244,930	575.00						41.30	
Tarlac	12	12	6	6	1,123	761	190,925	189.00						67.70	
Tayabas	31	20	28	17	365	304	257,652	250.00						76.00	
Zambales	22	21	11	11	647	420	60,821	654.00						65.00	
Total	1,648	1,074	1,070	806	25,761	18,066	7,998,684	324.00		3	35	27	77	70	

Province.	Month.						Total.	Population.	Morbidity rate per 100,000 population.	Num-ber of isola-tion houses estab-lished.	Cases hospi-talized.		Fatality rate.		Cases.			
	December.										C.	D.	A-mong hos-pital-ized.	P. ct.	Adults	In-fants.	Total.	Vacci-nated with postiva-tive-cults.
	C.	D.	C.	D.	C.	D.												
Abra	526	186	666	262	725	255	3,952	68,728	13.00									
Albay	285	197	195	107	103	84	1,738	289,333	1,463.00	2	1,067	162	32.00	11.11	(a)	6	9	
Ambos Camarines	12	7	30	11	6	3,048	1,880	139,812	2,118.00	1	112	32	28.57	53.80	(a)	257	3,048	
Antique							956	47,995	199.00					58.70	791	939	153	
Bataan														50.20	17	939	956	
Batanes	6	4	40	9	5	3	1,605	361,546	445.00	1	70	19	27.20	7.60	(a)	3	9	
Batanga	323	137	223	109	131	57	5,439	369,886	1,470.00					48.60	1,737	3,702	5,439	
Bohol	2	1					691	251,923	274.00	2	178	69	38.76	54.86	139	492	631	
Bulacan	26	1	9	2	24	9	797	140,109	654.00	3	115	11	9.50	19.70	268	529	797	
Capiz	15	13	30	28	18	15	1,086	709	228,811	413.00				65.10	351	735	1,066	
Cavite							1,237	337	475.00	1	16	2	12.50	77.50	328	949	1,237	
Cebu	269	149	255	104	159	66	14,381	8,686	938,274	1,588.00	16	1,949	662	31.77	63.00	(a)	15	
Ilocos Norte	2						8,486	2,914	3,629.00	25	4,776	1,031	21.60	50.70	(a)	6,104	8,486	
Ilocos Sur	8	4	8	3			3,369	1,732	334,789	1,729.00	10	1,432	862	50.40	49.00	(a)	932	
Iloilo	147	111	120	80	61	42	2,877	1,996	465,563	620.00	1	343	145	32.73	75.45	(a)	1,945	
Isabela							211	126	79.711	265.00	21	193	108	56.02	100	(a)	932	
Laguna	2	2					949	533	162,030	772.00								
La Union	18	3	11	2	11	2	2,420	125	140,829	298.00								
Leyte	47	46	28	15	14	16	11,081	6,241	599,918	1,847.00	21	3,124	835	26.70	67.60	3,331	7,750	
Mindoro	2		6	4	3		303	43	55,210	549.00								
Mountain Province	27	16	9	4	16	6	450	186	189,566	969.00	9	183	42	23.00	53.90	110	193	
Nueva Ecija	63	29	13	10	1		3,371	1,606	135,996	2,332.00								
Nueva Vizcaya							141	40	27,428	1,560.00	24	141	40	28.46	50.10	177	273	
Occidental Negros	49	30	34	20	9	8	1,042	498	307,198	338.00	2	116	34	29.30	17	177	450	
Oriental Negros	84	58	48	32	27	43	4,572	1,783	194,821	2,310.00	17	687	120	17.46	42.80	(a)	115	
Palawan							15	6	33,075	45.00	2	11	3	27.20	75.00	13	2	
Pampanga							93	59	226,859	39.00	11	63	33	52.37	86.00	8	15	
Pangasinan	85	30	49	19	11	3	8,792	3,302	463,234	1,860.00	26	163	83	51.00	66.10	61	276	
Rizal							337	196	149,894	1,223.00								
Romblon	45	3	62	4	34	5	735	365	60,063	1,223.00								
Samar	500	175	580	121	57	42	5,028	1,603	311,939	1,611.00	23	1,345	252	18.70	36.70	474	4,554	
Sorsogon	166	135	180	146	154	125	3,750	2,380	194,930	1,925.00								
Tarlac	29	15	47	13	88	40	1,935	696	257,652	660.00								
Tayabas	257	62					1,407	696	257,652	246.00	10	679	181	26.60	70.70	292	958	
Zambales							33	29	60,821	54.00						33	45	
Total	2,480	1,352	2,071	1,105	1,394	831	93,380	45,873	7,998,684	1,174.00	228	16,743	4,716	2%	54	19,909	56,018	
																	52,752	

a Not reported.

The attention given by some of the district health officers in the eradication of this epidemic was so very little that the following circular was issued on July 7:

PHILIPPINE HEALTH SERVICE.

MANILA, July 7, 1919.

CIRCULAR }
R-53. }

To all district health officers:

Information from different quarters has been received in this office to the effect that incidence of dysentery is increasing in many provinces of the Islands, and that district health officers and presidents of sanitary divisions are not paying due attention for the control of said disease.

The information that cases of dysentery are increasing has been confirmed by the weekly reports submitted to the Central Office by district health officers.

In order that dysentery outbreaks may not become an epidemic, attention of the district health officers is invited to the provisions of Circular Q-42 of this office, dated July 18, 1919, in which is outlined the sanitary measures to be taken for controlling an epidemic of dysentery, with the request that same be enforced in all health districts.

(Sgd.) V. JESUS,
Acting Director of Health.

At the end of the present year, thirty provinces of this division remained infected, but with a tendency to disappear.

No special sanitary measures other than the routinary ones were taken for the eradication of this epidemic.

Smallpox.—(See Table H-2.) The epidemic of smallpox in the present year was a continuation of the epidemic of last year, which, invading new provinces, acquired more extension and virulence than in the past year.

Ninety-three thousand three hundred eighty cases and 45,831 deaths from smallpox were reported in 1919 as against 33,089 cases and 14,092 deaths reported in 1918.

The most severely infected provinces in the past year were Rizal, Cebu, Leyte, and Laguna, but in 1919 the epidemic acquired serious character and extension in Cebu, Leyte, Ilocos Norte, Ilocos Sur, Oriental Negros, and Pangasinan. As Leyte, Cebu, Pangasinan, and Ilocos Norte and Sur are provinces of large population the epidemic caused a terrible loss of life.

Two hundred eighty-eight emergency hospitals, including about one hundred isolation houses, were established for the treatment and isolation of patients in which 16,743 cases were hospitalized, registering 4,706 deaths which gives a mortality rate of 28 per cent among hospitalized as against 54 per cent among those not hospitalized.

Of the 56,018 cases reported with distinction between adults and children, considering as children those less than 8 years of age, 36,109 were children, or 35 per cent of the total, and of the 56,018 total cases reported 52,763, or 94 per cent had never been vaccinated.

This epidemic, which greatly increased the infant mortality in 1919, was perhaps exclusively due to defective organization of vaccination in previous years.

The majority of the people in the Philippines are probably more aware or convinced of the effectiveness of vaccination against smallpox than the people in other countries because they have witnessed the previous situation of smallpox in the Philippines and the effect of the systematic vaccination carried out several years ago that has saved thousand of children and cut out smallpox completely for about ten years. However, the majority composed of more or less educated people do not seem to comply with the laws of vaccination voluntarily. This fact calls for more active and energetic measures to keep the people immune to smallpox.

In 1918 and 1919 the following circulars regulating the procedure in the vaccination work and the control of epidemics were issued:

PHILIPPINE HEALTH SERVICE.

MANILA, February 25, 1918.

CIRCULAR }
Q-14. }

To all district health officers:

This office is in receipt of information that in various provinces in which no case of smallpox, varioloid or varicella has occurred for many years these diseases are again occasionally appearing.

This fact may be due to annual systematic vaccination not having been properly carried out, or it may be that the inhabitants of certain localities remained unvaccinated.

Since lack of immunity of the inhabitants of any locality may eventually lead to the formation and spread of an epidemic of smallpox, this office directs that a general and painstaking vaccination be carried out throughout the Archipelago as follows:

1. Children recently born may and should be vaccinated.
2. Children under 2 years of age who have at any time been vaccinated with positive results need not be vaccinated. If vaccination has not resulted positive at least once, they should be vaccinated again.
3. All other persons should be revaccinated even though they have been vaccinated in former years with positive results, except those successfully vaccinated during 1917.
4. All contacts of a case of smallpox, varioloid or varicella should be immediately vaccinated.
5. Vaccinations should be performed by incision and not by scarification, bleeding should not be caused, and the virus should be deposited on the opening of the skin, but not introduced beneath the surface.

6. A monthly vaccination report on Form No. 36 shall be submitted to the central office not later than the 10th of each month.

The following instructions must be followed with reference to the small-pox patient and contacts:

1. If there is no hospital to which the patient may be taken he should be isolated in a room screened against flies.

2. All persons except those who are caring for the patient should be excluded from the sickroom.

3. The persons who are caring for the patient should be vaccinated before assuming such duties.

4. The persons who are caring for the patient should wash their hands with water and soap and a disinfecting solution immediately after touching the patient or any object used by or in the same room with the patient. Also the clothing worn while caring for the patient should be left in the room when the persons caring for him go out.

5. All discharges from the nose, mouth or suppurating lesions of the patient should be immediately disinfected by immersion in a 5 per cent carbolic acid solution or a solution of equivalent disinfectant value, or by burning.

6. All objects used or touched by the sick, including clothing, should be carefully disinfected, as above described.

7. A general terminal disinfection of the patient's room should be immediately performed when the patient recovers.

J. D. LONG,
Director of Health.

PHILIPPINE HEALTH SERVICE.

MANILA, April 2, 1918.

CIRCULAR }
Q-17. }

To all district health officers:

The spread of the smallpox epidemic in Manila and in some provinces of the Archipelago, shows that the immunity conferred by the general vaccination in the years 1909 and 1910 is being lost.

This office in issuing Circulars O-49, dated May 11, 1916, and Q-14, dated February 25, 1918, ordering a general vaccination and outlining the rules by which it should be governed, had as its purpose the reconferring of the immunity lost and the avoidance thereby of an epidemic of smallpox.

Up to March 31 of this year, according to the records of this office, there had been sent to the provinces 515,300 units of virus, yet up to the said date, only 14 provinces had submitted the monthly vaccination report; and condensing the data reported it appears that there were 72,707 persons vaccinated, 54,270 inspected, 34,587 being positive.

From these data the following conclusions are declared:

1. That the number of persons vaccinated is much smaller than the number of units of vaccine sent.

2. That the number of persons inspected is only 48 per cent of the number vaccinated.

3. That the percentage of positive results obtained is much less than that obtained in the city of Manila.

From a study of these data it appears that some district health officers do not take the proper interest in a sanitary measure so necessary to protect the community, and which imposes upon this office the duty of stating

that it is disposed to punish severely any negligence committed in this particular, and to order that without excuse or delay of any sort not only all the requirements of the said Circular Q-14 be strictly complied with, but also the following:

(a) The monthly report required by Rule 6 of Circular Q-14 shall be submitted to this office within the first five days of the month following that of the vaccination.

(b) District health officers who have not yet submitted the reports for the months of January, February, and March of the present year shall submit them immediately.

(c) The number of persons inspected should equal the number vaccinated, and if this is not possible an explanation of the reason therefor should be given.

(d) If the percentage of positive results is less than 60, an explanation of the causes to which the inferior percentage is attribute should be included.

J. D. LONG,
Director of Health.

MANILA, August 12, 1918.

CIRCULAR }
Q-48. }

To all district health officers:

The attached statement shows the extent of the outbreak of smallpox in the provinces from March 1918 when the first cases were registered. Upon examination of this statement, it will be noted clearly that vaccination and revaccination campaigns in some provinces have not been carried out with the intensity and rapidity required by the circumstances; this is proven by the fact that smallpox has not lost its epidemic tendency in the provinces, while in Manila smallpox has practically disappeared since July 30, the date that intensive vaccination and revaccination in the city terminated.

It is desired to state in this connection that on inspections made by the officers of the service in the provinces, children of 0 to 7 and more days of age living with and in contact with smallpox patients have been found unvaccinated, and the reasons given by parents, upon being questioned, were that the health officials themselves in charge of vaccination refused to vaccinate the said children on account of their being too young. In some instances persons in the same danger of contagion had not been vaccinated because it was alleged that they were suffering from itches or other kinds of skin disease.

It has also been learned that when a person, especially if he is well-to-do, refuses to submit himself or any member of his family to vaccination, health officials do not make the necessary efforts to have them vaccinated by trying to enforce the provisions of Article XIV, chapter 37, and sections 2693 and 2694 of the Revised Administrative Code.

This practice should cease for the sake of the public health. There is nothing from a scientific point of view that contraindicates vaccination when the chance of exposure to contagion exists. Newborn infants, as well as persons suffering from skin diseases, pregnant women, expectant mothers or during puerperium, tuberculous persons, old people, etc., must be vaccinated. Paragraphs 304 and 408 of the Bureau of Health Manual and 127 of the Sanitary Inspectors' Handbook should not be interpreted

as fixing the vaccination age but only as excusing sickness of severe acute character.

The smallpox outbreak in the provinces must be eradicated with the same rapidity, facility and effectiveness as in Manila, otherwise it will be a disgrace for the health service in the provinces, giving just grounds for charges of inactivity and inefficiency. This office hopes that district health officers understand well that the responsibility of eradicating smallpox in the provinces rests upon them and therefore will show more activity in complying with their duties for the welfare of the inhabitants of the province whose health they protect

J. D. LONG,
Director of Health.

Report of smallpox cases occurring in the provinces during the period from March to July, 1918.

Province.	March.		April.		May.		June.		July.	
	C.	D.	C.	D.	C.	D.	C.	D.	C.	D.
Albay			1	0						
Ambos Camarines							4	0		
Antique							50	7	16	5
Bataan					2	0	65	21	71	30
Batangas			12	1	88	17	227	55	363	92
Bohol							3	1	6	1
Bulacan	6	3	42	14	304	139	528	281	399	209
Cagayan							4	0	3	0
Capiz										
Cavite	2	1	1	0	73	17	166	76	245	130
Cebu							38	6	37	5
Ilocos Norte	1	0	4	1	40	2	83	13	94	33
Ilocos Sur			1	0	10	5	74	15	115	36
Iloilo										
La Union			3	0			4	1	13	2
Laguna	2	1	2	0	148	32	320	115	571	266
Leyte					8	0	13	0	34	6
Mindoro					10	0	1	1	19	2
Mountain Province										
Nueva Ecija			1	0	2	1	2	0	29	3
Nueva Vizcaya					8	2	11	1		
Occidental Negros									29	5
Oriental Negros									57	22
Pampanga	22	8	50	16	68	36	176	45	310	78
Pangasinan	2	0	14	1	68	28	166	34		
Palawan										
Rizal	8	0	37	0	597	414	857	431	1,462	750
Romblon										
Samar	172	85	143	17	81	14	4	0	13	5
Sorsogon					7	2	6	1		
Tarlac					1	0	6	4	14	3
Tayabas	1	0	3	0	7	0	44	8	111	62
Ysabela					6	0				
Zambales			2	0	1	1	16	1	19	7
Total	216	98	316	50	1,529	710	3,868	1,117	4,031	1,752

PHILIPPINE HEALTH SERVICE.

MANILA, January 6, 1919.

CIRCULAR }
R-2. }

To all district health officers:

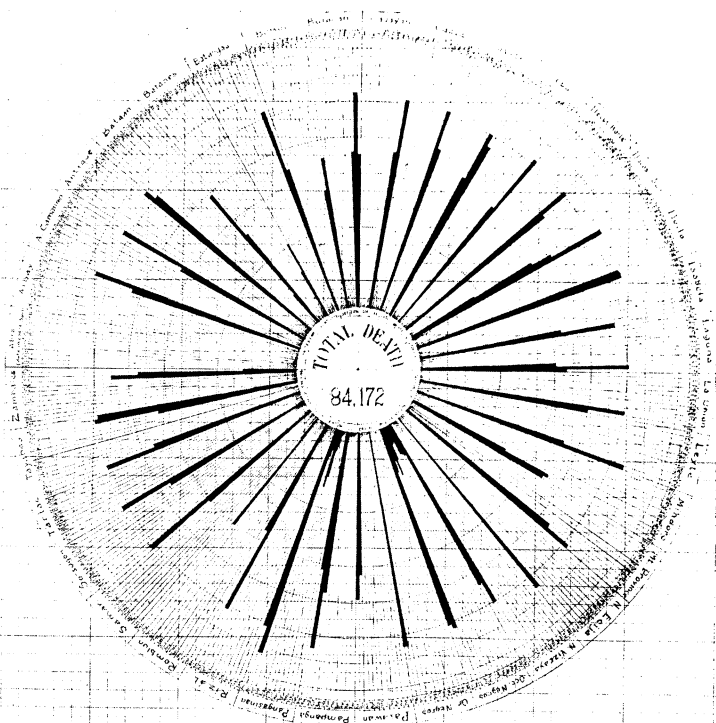
It is noted from the reports of smallpox received from the district health officers that in some provinces the cases of said disease are increasing.

This fact is indubitably due to lack of energy and thoroughness in carrying on the vaccination campaign.

The attention of the district health officers is invited to the provisions of Circular Q-48 of this office, and also they are hereby required to exercise great care and supervision in the vaccination work performed by their personnel.

DEATHS REGISTERED BY INFLUENZA DURING THE YEAR 1918
IN THE PROVINCES.

Logarithmic Scale:



If the cases of smallpox are increased in a health district, an explanation of the cause of such increase shall be given in the submitted reports.

(Sgd.) V. JESUS,

Acting Director of Health.

and a more extensive and scientific vaccination among the people was organized.

This plan is extensively explained under the heading, "vaccination," on pages 204 to 217 of this report.

At the end of the present year, more than ten million (10,000,000) persons had been vaccinated which constitutes more than the population corresponding to this division.

Only 12 provinces continued reporting cases of smallpox at the end of the year. Cases registered were mostly found in remote barrios where vaccination could not be carried out rapidly due to the deficiencies of transportation and also in assuring fresh vaccine for said places. Powdered dry vaccine is at present prepared by the Bureau of Science and with this kind of vaccine the problem of making good vaccinations in remote places will be solved.

Influenza.—(See table H-3.) A total of 5,759 deaths from influenza has been reported during the year and especially during the early months. It is believed that they were, in the majority of cases, protracted cases of influenza from the last great epidemic.

None of the sanitary measures taken against the disease have given definite protection against the epidemic, except some few general hygienic principles equally applicable to such other diseases as tuberculosis and pneumonia.

Hereunder is a chart showing the monthly mortality during the year 1918.

Mortality from communicable diseases.—The following table shows the total number of deaths reported during the four last years attributed to all communicable diseases:

Year.	Population considered. ^a	Total deaths.	Deaths from communicable diseases.	Percentage compared with total deaths.	Rate per 1,000 population.
1919	8,871,755	307,510	128,497	41.70	14.40
1918	8,728,113	334,903	147,957	44.00	17.00
1917	8,584,377	194,685	45,455	23.50	5.30
1916	8,440,641	180,384	41,101	23.00	4.80

^a The population considered has been obtained by arithmetical calculation from the Christian population given in the official census for 1903 and 1918. The Christian population only has been considered because data from the non-Christians cannot be obtained.

The figures given in the above table are not in accordance with those given in the report for 1918 due to the fact that district health officers made some rectifications in the reports submitted in the present year.

Province.	Month.						Total.				Population.	Morbidity rate per 100,000 population.	Num-ber of isola-tion houses estab-lished.	Cases hospi-talized.		Fatality rate.	
	October.			November.										December.			C.	D.	Among hospi-talized.	Not hospi-talized.
	C.	D.		C.	D.		C.	D.		C.				D.	Per ct.	Per ct.	
Abra							192	116	68,728	279.00						60.42	
Albay	43	15		18	7		1,122	374	269,333	441.00						43.40	
Ambo Camarines							6	2	258,554	415.00	1	5				58.00	
Antique							831	347	139,812	58.00							
Bataan							19	19									
Batanes							14	6	5,358	167.00						43.00	
Batangas	6	3		1	1		184	76	361,546	60.00						41.30	
Bohol	3	3					609	609	369,839	161.94							
Bulacan				2	2		9	9	251,923	17.00						91.11	
Cagayan							1	1	161,909	843.00						13.20	
Capiz	2	2					1,344	177	228,811	38.00						60.00	
Cavite							87	52	228,811	3.00						100	
Cebu	20	20		22	22		9	9	134,678	87.00						87.00	
Ilocos Norte				2	2		817	716	938,274	18.00						100	
Ilocos Sur	3	3		7	6		33	33	233,789	133.40						100	
Iloilo	1	1					2,890	275	234,548	60.00							
Isabela				1	1		275	263	465,563	79,711							
Laguna							1,373	28	162,030	56.00						20.00	
La Union	1	1					80	54	140,829	126.00						35.00	
Leyte	2	2		9	9		181	512	599,918	84.00						29.80	
Mindoro	15	13		33	10		4	328	59,918	84.00						64.00	
Mountain Province	7	3		32	3		1	574	55,210	1,039.00						24.00	
Nueva Ecija	3	3		7	5		1,770	183	189,566	965.00	58	60	2	1.90		76.00	
Nueva Viscaya							79	57	135,996	420.00						72.10	
Occidental Negros	30	8		14	5		437	215	307,198	160.00						44.20	
Oriental Negros	7	7		2	2		299	299	194,821	195.00						100	
Palawan	1	1		37	2		3,590	212	33,075	10,854.00	4					5.90	
Pampanga							5	5	226,859	2.00							
Pangasinan	2	2		5	5		3	3	463,234	22.00						33.60	
Rizal	38	5		58	4		104	87	149,894	236.00						19.60	
Romblon							367	70	60,063	71.00						47.60	
Samar	10	7		15	10		43	9	311,939	112.00						76.20	
Sorsogon	5	3		2	2		167	167	194,930	171.00						100	
Tarlac				2	2		335	252	180,925	58.00						36.31	
Tayabas	37	6		7	3		98	98	257,652	74.00						100	
Zambales	1	1		14	14		201	73	60,821	87.00							
Total.	237	106		290	116		9,054	5,759	7,998,684	240.00	63	65	2	30	30		

Owing to the influenza epidemic in 1918 the mortality was approximately three times more than in 1916 and 1917 and the high ratio existing in the present year is due to cholera, dysentery and smallpox, registered as epidemics.

Taking this fact into consideration, the same statement made in the report for the preceding year should be transcribed in the present year.^a

With better coöperation of the provincial and municipal authorities; with a greater desire on the part of the people in complying with the sanitary rules and regulations recommended by the health officers and directed towards the best control and eradication of communicable diseases; and with a higher grade of efficiency on the part of the sanitary personnel, it will be easier to reduce the general mortality of this division to 20 or less per thousand population which should be the regular rate, if the deaths caused by epidemics were not considered.

V.

RABIES.

TABLE I.—*Rabies.*

Province.	Number of persons bitten.		Number of persons died.		Number of persons to whom antirabic serums have been administered.			
					Cases.		Deaths.	
	1918	1919	1918	1919	1918	1919	1918	1919
Abra		1		1		1		1
Albay	19	13	8	5	9	1	1	
Ambos Camarines	13	5	4	2	3	3		
Antique	2	5		5		3		1
Bataan								
Batanes								
Batangas		1		1				
Bohol	2							
Bulacan	5	19	2	8	5	18	1	7
Cagayan	4	1	1	1	2			
Capiz	3	3			3	3		
Cavite	1	1		1				
Cebu	3	10	2	5	3	10		
Ilocos Norte	11	26	2	5	2	26	2	6
Ilocos Sur								
Iloilo	54	31	6	12	1	5		
Isabela	2	4	1	4	1		1	
Laguna	5	2	1		4		2	1
La Union		6				4		
Leyte		2		1				
Mindoro								
Mountain Province	1	1						
Nueva Ecija	8	22	8	5	8	5	8	5
Nueva Vizcaya	5	1			4			
Occidental Negros	1	1	1	1				
Oriental Negros	10	2	2		8	2		
Palawan		2						
Pampanga	7	6	1		6	6		
Pangasinan	43	33	18	14	25	19	1	
Rizal	8	26	2	3	5	8	1	1
Romblon								
Samar	2	5	2	3		3		1
Sorsogon	5	5	5	5				
Tarlac	19	17	8	1	5	13		
Tayabas	13	11	2	4			6	
Zambales	5	2		1		2		1
Total	281	264	72	83	98	132	23	23

^aSee pages 112 to 120 of the Annual Report for 1918.

There was a slight increase in the number of persons bitten by suspected rabid dogs during the year.

Antirabic treatments have always been applied with the least possible delay to persons bitten and the Bureau of Science furnished immediately all the treatments requested.

The Pasteur treatment was only applied to 132 persons of the 264 reported as having been bitten, due to the fact that many of the persons bitten, or their relatives, did not report the case to the health authorities. It is also believed that not all the cases reported as bitten were in reality bitten by rabid dogs, but the antirabic serum was applied as prophylactic measure.

In very few instances the suspected cases were confirmed by laboratory tests, because in rare cases only the brains of suspected rabid dogs could be obtained for examination by the Bureau of Science for Negri bodies.

Muzzling of dogs was not enforced by the municipal authorities and the poisoning of stray dogs with strychnine, though strongly opposed in some provinces by owners of dogs, was resorted to as its enforcement was more particable and found no opposition on the part of the public which feels grateful when it is relieved of hordes of dirty insanitary canines which constitute real and serious pests to unprotected kitchens.

Over 15,000 stray dogs were killed in the present year by poisoning.

VI.

LEPROSY.

There are no statistics available showing the number of lepers collected in the provinces by years during the past five years. The population of the Culion Leper Colony is about 5,000, but it was not possible to include in Table J data by provinces for the years prior to 1918.

It appears from a study of said table that the number of lepers collected is decreasing in the provinces. It is true that the collection of lepers in the provinces is not done with the same intensity each year, but the provinces of Cebu being the one in which a notable decrease has occurred and knowing that this province has given the largest contingent of lepers in the past to the Culion Leper Colony, it may be deduced that the procedure of taking all the lepers found in the provinces and confining them in the Colony will result successfully in the eradication of leprosy in the Islands.

TABLE J.—*Leprosy.*

Province.	Number of lepers collected.		Number of lepers died in the detention houses.		Number of lepers sent to Cullion.		Number of lepers escaped from the detention houses.		Number of lepers re-captured.	
	1918	1919	1918	1919	1918	1919	1918	1919	1918	1919
Abra	1	5			1	5				
Albay	59	51			54	51	5			
Ambos Camarines		27		1		22		4		
Antique	9	3	1		7	3	1		2	
Bataan		3				3				
Batanes										
Batangas	12	5		1	11	4	1			
Bohol	54	22		1	34	21				
Bulacan	13	16			13	16				
Cagayan	37	34	1	1	36	32		1		
Capiz	54	24		1	53	23	1			
Cavite		23				21		2		
Cebu	279	123	16	5	250	118	13		4	
Ilocos Norte	1	3		1	1	2				
Ilocos Sur	5	23			3	14	2	9		
Iloilo	36	32		6	36	26				
Isabela		2				2				
Laguna	5	8			5	8			2	
La Union	4	1			3	1	1			
Leyte	12	13	2	1	8	7	2	5		
Mindoro	5	7		1	4	1	1	5		2
Mountain Province		8				8				
Nueva Ecija	10	19	3	6	8	11		2		2
Nueva Vizcaya										
Occidental Negros	18	16	1	2	12	12	5	2		
Oriental Negros	7	7			7	7				
Palawan	2	1			2	1				
Pampanga	4	7			4	7				
Pangasinan	14	9			14	8		1		1
Rizal	11	23			11	23			4	7
Romblon		11		1		10				
Samar	20	29		1	18	28	2			
Sorsogon	16	7			16	7				
Tarlac	8	2			8	2				
Tayabas	5	3			2		3	3		
Zambales	6	7			6	7				
Total	687	574	23	29	627	511	37	34	14	12

It has been the practice of the Service to arrange leper collection trips each year by boats and trains. The lepers collected by train are sent to the San Lazaro Hospital in Manila where the lepers collected are submitted to clinical and microscopical tests. Those who are found positive are taken from San Lazaro Hospital and definitely confined for treatment in the Cullion Leper Colony.

To the boats designated for the collection of lepers are assigned a committee of two doctors—one commissioned officer of the Service to make the clinical diagnosis and one bacteriologist for the bacteriological tests. All the suspected lepers found positive either by clinical or bacteriological diagnosis or both are transferred to the Cullion Leper Colony.

When for some reason or another the suspected lepers cannot at once be taken to the San Lazaro Hospital or to the Cullion Leper Colony, the routine procedure is to deliver them to the municipal or provincial authorities for safe keeping until they can be transferred to their definite destination.

On some occasions lepers so delivered succeed in escaping and a strong suspicion of complicity on the part of their guardians has been entertained by the Service.

Revenge and anonymous letters are the best sources of information to localize detected cases of leprosy though some lepers are identified in fiestas and sometimes in the public dispensaries.

Actual scientific knowledge has shown that the contact plays an important rôle in the prevalence of leprosy in the Islands. Perhaps the intermediary host will be found in the future, but no positive proofs could at present be submitted which could be assigned to a determined host as the actual agent of transmission of leprosy.

The part that the contact plays in the propagation of this disease is evidenced by the fact that it frequently happened that in a family where one or more members were affected with leprosy other members of the family, sooner or later, were affected.

In the Visayan Islands leprosy is more commonly found than in Luzon. No apparent cause could be presented to explain this fact.

The district health officer of Bulacan made the following suggestions with regard to a more effective measure for the prompt eradication of this disease:

Under the present conditions it will be very hard and very costly, if not at all impossible, to undertake a real clean-out campaign for leprosy as the leper thinks that it is a question of life and death to him his segregation at Culion Leper Colony. Consequently all efforts are made to evade arrest and in the majority of cases he is successful. A leprosarium for two or three provinces will not be costly to maintain and when that time comes, when the leper finds out that he will not only be treated in such a hospital but that when he dies he will be or may be buried by his dear ones in the graveyard of his own folk, then leprosy will become a thing of the past as all will either be cured or buried to the satisfaction of all. Until then all other measures will not only be palliative but costly and it would be next to impossible to eradicate leprosy with the present system and means at command.

It is the opinion that the district health officer of Bulacan considers the problem of segregation of lepers rather under a sentimental than a sanitary standpoint and from said point of view the suggestion of the district health officer of Bulacan is very graceful, but sanitarily speaking, it appears to be indefensible.

VII.

VACCINATION.

TABLE K.—*Vaccinations performed during the year.*

Province.	Number of units issued.	Total vaccinations.	Total inspections.	Positives.	Rate (per cent) of positives.
					<i>Per cent.</i>
Abra.....	92,050	85,266	73,370	39,278	53.53
Albay.....	456,000	414,835	285,361	214,351	75.00
Ambos Camarines.....	288,200	259,972	170,991	126,057	48.00
Antique.....	103,650	85,836	77,617	50,247	65.00
Bataan.....	49,423	44,879	28,309	19,547	69.00
Batanes.....	3,000	2,354	2,354	1,653	70.00
Batangas.....	275,300	177,501	84,499	58,267	68.75
Bohol.....	281,350	282,183	233,052	162,659	69.00
Bulacan.....	101,350	97,297	48,068	31,600	65.00
Cagayan.....	269,700	197,417	712,501	71,504	63.00
Capiz.....	174,350	154,362	145,167	111,141	76.00
Cavite.....	168,500	145,645	117,005	71,947	64.00
Cebu.....	684,893	683,366	593,618	362,813	61.00
Ilocos Norte.....	263,100	432,614	302,129	150,167	49.00
Ilocos Sur.....	276,000	275,729	184,877	117,174	50.70
Iloilo.....	580,100	560,139	758,526	111,652	62.00
Izabela.....	169,900	82,237	76,998	56,469	70.00
Laguna.....	131,500	142,153	73,425	46,582	32.79
La Union.....	138,908	153,604	139,858	88,465	63.00
Leyte.....	788,500	782,070	451,409	295,152	37.74
Mandoro.....	22,500	20,176	11,693	6,087	52.00
Mountain Province.....	106,110	96,033	58,823	51,729	54.00
Nueva Ecija.....	261,000	106,171	118,956	79,203	41.80
Nueva Vizcaya.....	25,500	27,154	25,817	20,166	88.33
Occidental Negros.....	225,000	208,813	170,316	123,803	73.00
Oriental Negros.....	150,500	151,111	124,578	84,847	68.10
Palawan.....	10,600	8,314	6,314	3,385	48.00
Pampanga.....	193,950	101,688	45,504	32,563	67.00
Pangasinan.....	362,450	362,126	323,466	219,098	67.00
Rizal.....	254,720	201,422	122,836	71,195	58.00
Romblon.....	62,400	60,361	26,150	18,590	67.06
Samar.....	195,913	180,523	105,196	57,129	32.00
Sorsogon.....	122,119	156,863	13,071	53,863	34.00
Tarlac.....	82,050	79,467	71,839	49,592	69.03
Tayabas.....	279,000	270,077	210,443	144,707	68.87
Zambales.....	46,100	47,480	41,932	29,182	61.00
Total.....	7,925,186	7,192,138	5,436,059	3,231,864	60.00

Seven million one hundred ninety-two thousand one hundred thirty-eight persons were vaccinated during the year, which, added to the 3,285,376 vaccinated in the year 1918, makes a grand total of 10,477,514 in two years which is more than the total population of this division.

It is the opinion that, although the statistics referring to vaccination should be one of the most important statistics in sanitation, unfortunately the data given in Table K is far from being accurate in many instances, due to frequent deception on the part of the personnel in charge of the vaccination work.

Sometimes reports are received stating that systematic vaccination has been completed in a certain municipality and this appears to be true upon consulting the reports of vaccinators, but on several occasions a personal inspection in the municipality concerned disclosed the fact that 20 to 30 per cent of the children were never vaccinated.

The difficulties found in the vaccination work are numerous in distant barrios not only on account of the fact that in such localities the people are not yet thoroughly convinced of the value of vaccination, but also due to the difficulty of taking fresh vaccine to such remote places.

In order to solve this difficulty, the Bureau of Science was requested to try the preparation of a dried and pulverized small-pox vaccine virus, and the following report was submitted by the Director of the Bureau of Science with reference to this matter:

The following report submitted by Dr. Schobl regarding the experiments so far carried on with dried and pulverized smallpox vaccine will doubtless be of distinct interest to you.

A limited amount of dried smallpox vaccine was prepared on September 20, 1919. This lot of vaccine was prepared at room temperature and was kept at room temperature in as dry a condition as possible. From time to time small portions of this vaccine were suspended in glycerine and tested on monkeys. The successive tests which were to show whether or not the vaccine is active were made at about weekly intervals.

Although the experiments are not yet finished, since the vaccine has proved to be fully virulent up to date, December 1, 1919, the results, so far obtained, are being reported because the time during which the vaccine kept at its full virulence seems to be sufficient for all practical purposes. The vaccine showed first class takes after being prepared and kept without ice for two months at room temperature.

To further demonstrate the practicability of shipping dried vaccine without ice to inaccessible places, this office performed the following experiment:

A part of the lot of vaccine which was prepared on September 20, 1919, was placed in suitable containers and shipped November 1, 1919, by Coast Guard Cutter Basilan. This boat left Manila November 1, northward bound. It reached Currimaos, Ilocos Norte, November 2; Pandan, Ilocos Sur, November 3; San Antonio, Zambales, November 4. It touched Manila port November 5 and sailed southward the same day. It reached Calapan and Romblon November 6; Pasacao, November 7; Culion, November 8; Surigao and Butuan, November 11; Cagayan and Iligan, November 12; Oroquieta and Dapitan, November 13; Zamboanga, the next day; Jolo on the 15th; Cotabato and Quinimi on the 16th; Glan on the 17th; Davao, 18th; Glan, 19th, and Zamboanga on the 20th; Cuyo on the 21st; Agutay and Culion on the 22nd; and returned to Manila on the 24th of November, 1919.

On November 25th, the vaccine was opened and tested on monkeys. It showed first-class takes in due time.

It will be noticed that the vaccine has been exposed to room temperature for forty days, never having been placed on ice. It made a trip practically around the entire Archipelago, having been kept during the trip in the cabin, and upon return gave first-class takes.

The results of this experiment seem to furnish the required evidence for the practicability of using dried vaccine both in inaccessible localities as well as a reserve stock to be kept ready at various places throughout the Islands for emergency.

The plan which appears to be practicable for prompt distribution of vaccine in case of outbreak of smallpox is as follows:

When the provincial laboratories are established, the laboratory man in charge of each will keep on hand sufficient amount of dried vaccine to vaccinate, say 5000 or 10,000 persons. When the reports of first cases of smallpox reach the provincial health officer, at the latter's request, the laboratory man can prepare a given number of doses, of glycerinized vaccine from the dried vaccine on hand. This should not take more than six hours to prepare. In other words, within six hours or less after the Health Officer has received report of outbreak of smallpox, the vaccination of the contacts and vicinity of the cases can be begun. In the case that the provincial laboratories will be sufficiently equipped with instruments and personnel to prepare fresh vaccine from animals inoculated in the provincial laboratories, it will not be necessary to carry on the work all year around if a stock of dried vaccine be kept in the laboratory. At the beginning of the outbreak, the dried vaccine should be used. This would give the laboratory man sufficient time to secure his animals, quarantine them, and prepare fresh vaccine. It must be borne in mind that the selection of animals, quarantine, and the process of preparation of fresh vaccine requires between 3 to 4 weeks. In other words, if this suggestion be approved and accepted, the vaccination, in case of outbreak of smallpox, could be begun immediately, that is at least 3 weeks earlier than a fresh supply of vaccine could be prepared.

It is hoped that all the remote places that remain nonimmunized against smallpox due to lack of fresh smallpox virus, will be immunized in the next year, using the dried and pulverized smallpox vaccine prepared by the Bureau of Science.

When no proper supervision by the responsible officials and no thorough vaccination in a locality are given, the best system of vaccination fails, but a good vaccination is a good protection against smallpox, affirmation confirmed by the fact that many mothers who have been confined in smallpox hospitals with their children sick of smallpox were only once vaccinated, but vaccinated well, and not one of them developed infection of smallpox in spite of the great exposure to which they had been exposed.

With the end to avoid the waste of vaccine virus the following circular was issued:

PHILIPPINE HEALTH SERVICE.

MANILA, *February 28, 1919.*

CIRCULAR }
R-29. }

To all district health officers, presidents of sanitary divisions, presidents, board of health and other sanitary employees:

Allotments of vaccine virus for distribution to health districts are hereby made in order that virus shall not be wasted.

In accordance with this arrangement the number of units of vaccine virus that may be furnished weekly to each health district of the Islands is shown in the table inclosed.

If a district health officer believes that the number of vaccinators at present employed in his district is excessive considering the vaccinations to be performed in connection with the allotment of the vaccine virus allowed to the district he is hereby authorized to reduce the force to the necessary number notifying this office of the names of those so separated.

District health officers are also reminded of the fact that the number of vaccinations that ought to be performed in their districts every month should be such as to reasonably justify the use of the number of units of vaccine virus received. Virus shall be furnished only upon the personal requisitions of district health officers and not at the request of other officers or sanitary employees.

If at the end of each month there is any vaccine virus left at the Central Office, additional units will be sent to districts which have shown their need for more, if requested.

V. JESUS,
Acting Director of Health.

And for safeguarding the newly born infants against the infection of smallpox the following circular was distributed:

PHILIPPINE HEALTH SERVICE.

MANILA, July 15, 1919.

CIRCULAR }
R-55. }

To all district health officers:

Attention is invited to the fact that although a systematic vaccination of practically all the provinces is being effected, regular monthly or quarterly vaccinations of the newly-born should be undertaken in every town independently of the systematic vaccination, with a view to preventing a recurrence of smallpox outbreaks among the nonimmune newly-born, as it would prove unwise to leave unprotected all babies and children who may be born from now on until the time is ripe for another general vaccination of the inhabitants of these islands. With the above end in view, it is directed that a monthly or quarterly census of living babies be made for every barrio of a given municipality by checking up the births reported with the number dying during the period covered by the census, causing every baby thereof to be vaccinated and revaccinated until rendered immune.

(Sgd.) V. JESUS,
Acting Director of Health.

The percentage of positives among the groups by ages from 0 to 10 years cannot be given exactly but it is estimated by several district health officers to be 80 per cent of those who had never been vaccinated. The average percentage of positives was 60 per cent according to the reports of vaccination submitted.

VIII.

VACCINATING PARTIES.

With the end in view to make a systematic and extensive vaccination throughout the Islands and to obtain complete im-

munization of all the inhabitants for the next eight years, the vaccination work was organized from two standpoints:

First. Vaccination in a focus which consisted of vaccination of all new-born and contacts of smallpox cases. This work was performed by the regular and temporary sanitary personnel assigned to the provinces.

Second. Intensive and extensive vaccination of all the inhabitants never vaccinated or vaccinated with negative results or vaccinated eight years ago. For this purpose six vaccinating parties were organized and their work was performed independently from the vaccination performed by the regular sanitary personnel above-mentioned.

Of these six vaccinating parties, three were assigned to the northern provinces of Luzon Island and three to the southern Islands (Visayan region).

Each party was composed of 20 vaccinators with a doctor as chief and their designations and assignments were as follows:

First vaccinating party.—Chief, Dr. Dalmacio A. Jugueta, assigned to Island of Cebu.

Second vaccinating party.—Chief, Dr. José Alberto, assigned to the Province of Ilocos Norte.

Third vaccinating party.—Chief, Dr. Genaro Loalhate, assigned to the Province of Isabela.

Fourth vaccinating party.—Chief, Dr. Pedro Reyes, assigned to the Province of Cagayan.

Fifth vaccinating party.—Chief, Dr. Francisco Velez, assigned to the Island of Leyte.

Sixth vaccinating party.—Chief, Dr. R. V. Ferrer, assigned to the Island of Samar.

The work done by these vaccinating parties is shown in the following table:

Tabulation showing the work done by the vaccinating parties.

Number of the party.	Number of municipalities vaccinated.	Population.	Number of vaccinators employed.	Number of days devoted.	Number of vaccinations performed.	Number of positives.
1	9	138,315	20	216	85,948	32,930
2	7	72,747	18	237	103,543	19,930
3	12	81,996	20	237	21,986	17,144
4	18	109,347	18	237	113,891	37,263
5	9	180,930	20	194	41,593	19,751
6	20	217,160	20	193	31,793	18,533
Total	75	800,495	116	1,314	398,753	145,561

and as rules for the best performance of their duties the following instructions were given in writing to each chief and vaccinators of the party:

REGULATIONS FOR PROVINCIAL SYSTEMATIC VACCINATIONS.

1. *Organization of parties.*—Vaccinators will be assigned to parties in charge of a chief, who shall be a medical officer of the Philippine Health Service, and who will be responsible for the proper performance of the work. The medical officer in charge will personally supervise the work of his group as far as practicable. To assist him there shall be the chief vaccinator who shall be an Insular sanitary inspector. No unnecessary detail of vaccinators to clerical work to the exclusion of actual vaccination will be allowed. One clerk will ordinarily be sufficient for a group, and he should be able to devote the greater portion of his time to actual vaccination.

2. *Itinerary.*—Upon being assigned to a province, the chief vaccinating party will arrange an itinerary which will take up the various municipalities in such order as will cause the minimum expenditure for traveling expenses keeping in mind the necessity of vaccinating certain districts during the dry season because of their inaccessibility during the rainy season. A copy of such itinerary will be forwarded to the Director of Health for his information. A provincial group will usually work as a whole within a municipality, and each municipality will be completed before proceeding to the next. Departures from the regular itinerary, or the division of a group among two or more municipalities will only be made in case of emergency, the reason for such departure being reported by letter to the Director of Health as soon as possible.

3. *Official census.*—Upon arrival in a town, the exact official census of the same should be ascertained, and the work shall not be considered completed until all persons have been vaccinated.

When vaccination is to be regarded complete.—No municipality, town or barrio should be regarded as completely and positively vaccinated unless the total positives equals at least 75 per cent of the total population. Negatives must be 25 per cent of the said population and only in those persons where repeated vaccinations made at three different periods resulted unsuccessful. Whenever possible a list of all negatives should be made for each town, barrio or municipality, this list to be delivered to the local officer or assistant sanitary inspector of the town.

4. *Order of work.*—Whenever practicable, the inhabitants of a barrio will be caused to present themselves at some central point at a fixed date and hour previously arranged for with the "president," "concejal" or "teniente" of the barrio, and a sufficient number of vaccinators will be detailed to vaccinate the entire population of such barrio promptly. When such an arrangement is impracticable, barrios and pueblos will be taken up systematically, street by street and house by house, until finished. In vaccinating large barrios at such distance from the poblacion as to require hiring of transportation, the vaccinators detailed to such a barrio should not leave same until the work is completed.

5. *Uniform, neatness, and conduct of vaccinators.*—Vaccinators will be required to wear the prescribed uniform while on duty; to keep their person and clothing neat and clean; to give especial attention to their hands and finger nails; and to comport themselves with proper courtesy and consideration toward the public.

6. *Who shall be vaccinated.*—(a) Children recently born may and should be vaccinated.

(b) Children of all ages, unless recently vaccinated with positive result.

(c) Persons of all ages and of both sexes, except those successfully vaccinated during the last preceding year.

(d) All contacts of a case of smallpox, varioloid or varicella should be immediately vaccinated.

7. *Who may be exempted from vaccination.*—(a) Persons of all ages afflicted with acute diseases.

(b) Persons presenting satisfactory evidence of having been successfully vaccinated within the preceding months (this fact may be verified by examining the scar) or having had an attack of smallpox during the preceding year.

8. *Diseases and other conditions not to be accepted as a cause for exemption from vaccination.*—Nervousness, hysteria, pregnancy, puerperium, menstruation, itch, eczema, and other skin diseases, and tuberculosis shall not be accepted as a cause for exemption.

9. *Method of performing vaccination.*—Chief vaccinators or squad leaders will see that vaccinators observe the following routine in performing vaccinations:

Scrub the site of vaccination with a pledget of cotton wet with alcohol; sterilize lancet in alcohol flames; after shaking tube of virus, take some on blade of lancet; then stretching the skin with one hand make two superficial incisions about one inch long and two inches apart, lengthwise of the axis of the arm. In performing this operation care should be exercised not to produce bleeding; rub virus into scarified area with flat of blade; the virus should not be pricked into the incision. Warn person vaccinated not to touch the vaccinated area, nor to allow clothing to do so until thoroughly dry, nor to put on it any dressing or any sort of "patis," "bagong," "vinegar," etc, nor to wash the same with soap and water.

10. *Certificates.*—For each vaccination performed, the vaccinator will deliver to the subject thereof a certificate properly filled but on Municipal Form 36. Certificate numbers will run serially for each municipality. The slip attached thereto will be delivered undetached from the certificate to the person vaccinated, to be subsequently detached and turned in by the vaccinator making the inspection, as outlined below.

11. *Vaccinators' report.*—Each vaccinator at the close of the day will be required to make the proper entry upon Municipal Form 15 of the stubs of his certificate book.

12. *Inspections.*—Inspection will be made from eight to twelve days after the vaccination. The result will be noted on the certificates and the detachable slip will be taken up and turned in at the end of each day to form a part of the records.

13. *Insane, lepers, blind, deaf and dumb etc.*—Vaccinators will be required to make report of all lepers, insane, blind, deaf and dumb, and of all dangerous communicable diseases encountered by them. The records of the municipal board of health or of the municipal secretaries will be checked up with these reports, the necessary corrections made, and a copy sent to the Director of Health, through the chief of the party. If dangerous communicable disease be encountered, the chief will at once notify the president of the local health organization or authority concerned.

14. *Relations with local officials.*—Chiefs of vaccinating parties, chief vaccinators or squad leaders and vaccinators will cultivate cordial relations with the provincial and municipal officials, and seek their coöperation, and

any failure to secure same, with the reasons therefor, will be reported by letter to the Director of Health.

15. *Coöperation of local health officers and employees.*—Presidents of local health organization and all other local health officials and employees, while vaccination is being carried on in their respective municipalities, will assist in the work. It is believed, however, that their coöperation in securing the assembling of the inhabitants of each barrio at some central point, and in other similar ways, will facilitate the work to a greater extent than their actual presence as a member of the group of vaccinators. The coöperation of the municipal presidents and police should be secured when necessary.

16. *Supplies.*—Requisitions for supplies, other than vaccine virus, required in the work of vaccination, will be made in Form 1, P. H. S., and will ordinarily be only for such quantities as will cover the estimated needs for one month, where communication with Manila is frequent and regular. Vaccinating parties operating in remote places where communication with Manila is infrequent and irregular should carry on hand a three to six month's supply sufficient to meet conditions. The following schedule may be used as a basis when preparing requisitions:

- 1 lancet, one-fourth kilogram cotton, and 8 liters alcohol per man per month;
- 1 alcohol lamp per man;
- 4 Forms 1, P. H. S., per months, each party;
- 100 Forms 36, P. H. S., per man per day;
- 1 Book, Form 20, P. H. S., per man per month;
- 2 Forms 59, P. H. S., per month each party;
- 2 Forms 60, P. H. S., per man per month;
- 4 Forms 115-A per man per month.

Bill of lading to cover shipments of property to be returned to Manila.

The stationery to be used by vaccinating parties will, as far as possible, be confined to the following articles: Letter heads, rubber erasers, paper fasteners, black ink, scratch pads, blotting paper, wrapping paper, lead pencils, pens, and twine. Variations from the above will be made when experience indicates that it is necessary.

17. *Vaccine virus.*—Shipments of vaccine virus for the supply of groups operating in provinces distant from Manila will be made in portable ice boxes, and requisitions will call for quantities in proportion to the frequency of communication, reliability of schedule, and facilities for preservation existing at the base of operations. Unless definite arrangements have been made with this office to have virus shipped at regular intervals, officials in charge of parties should invariably wire this office as to the number of units they desire shipped from Manila on a given date; for instance:

"Ten thousand, April ninth,

Montinola."

Such information should always be forwarded several days before the steamer is expected to sail from Manila. Chiefs of vaccinating parties will be notified by wire of each shipment and they will arrange to receive the virus promptly. Empty ice boxes will be returned to Manila by first available transportation by such steamship lines as have agreed to return them free of charge, and a letter should be mailed on the same boat notifying the Director of the date of such shipment and name of vessel. When

the base of operations enjoys frequent and regular communication with Manila and is not more than forty-eight hours' distant, vaccine virus may be sent by mail or other convenient method without special measures for preservation, and requisition should be frequent and for small quantities.

18. *Payment of vaccinators.*—Vaccinators will be paid by check from Manila, on payrolls made up and forwarded by the official in charge of the vaccinators, under the following rules:

A single copy of the payroll for the entire party will be made on the 23d of each month (including that date) and certified by the officer in charge of party, and forwarded to this office immediately.

19. The "name," "designation," "period of service" (1st to 30th), and "authorized monthly rate of pay" columns only will be filled out before forwarding. The "amount received," "signature," "witness," and "remarks" columns may be left blank. The last-mentioned column, however, should be used for giving number, date and town where issue of cedula for current year of new appointees. On the last day of the month telegraphic reports will be made by the chief of the party of all absences during the month. The payrolls will be held in this office until such a report is received. Special arrangements, if desired, may be made by officials in charge of vaccinating parties upon application.

20. *Number of vaccinators.*—Each official in charge of a vaccination party will be furnished with a letter which will state the maximum number of vaccinators that may be employed and their rates of pay. In no case will payrolls for an additional number be approved unless specific authority from this office is first had. Separate appointments will not be required.

21. *Promotions.*—Chiefs of vaccinating parties are authorized to use their own judgment with regard to promotions or reductions in salary, provided that they do not exceed the highest rate authorized in the letter referred to above. It is suggested, however, that except in extraordinary instances, vaccinators be paid a lower salary than that authorized, and then gradually promoted as they show efficiency in their work.

22. *Traveling expenses.*—Traveling expense accounts must conform in all respects to the provisions of Article IX of the Bureau of Health Manual as amended by subsequent circulars. Accounts for traveling expenses will be made by each vaccinator, monthly, in duplicate, on Form 8-A, and will be accompanied by receipts on P. H. S. Form 20, also in duplicate. Vaccinators will be restricted to third-class transportation when traveling by rail or water, and to a moderate amount of baggage in all cases. No transportation expense will be allowed for vaccinators in traveling short distances between barrios, and after the vaccination of a barrio is commenced, no transportation will be allowed except under extraordinary circumstances, until the vaccination of said barrio is completed.

23. *Checking of accounts.*—Chiefs of vaccinating parties, will carefully scrutinize and check each item in the expense vouchers of their vaccinators, seeing that the accounts are properly rendered and that the prices entered are not in excess of those paid by native residents of the locality in which the expenses are incurred. Failure to comply with these instructions or the approval of excessive or unusual charges will be considered grounds for deducting the excess or overpayment from the salary of the inspector or official checking the items and certifying to their correctness.

24. *Transportation.*—Where the hire of a carromata or other vehicle is necessary, two or three vaccinators will ordinarily occupy a single vehicle. Whenever it is more economical for the Government, vaccinators will be ex-

pected to walk if the condition of the roads will permit it; in other words, if the salary of the vaccinators for the time consumed in walking would be less than the transportation, vaccinators will be expected to walk unless there is some excellent reason to the contrary.

25. *Discharge of vaccinators.*—In every case of discharge of vaccinators for reasons which would prohibit their reëmployment, report of all circumstances shall be made by the person in charge of the party, whereupon notice of such will be sent to all officers in charge of parties throughout the Islands and the person or persons discharged shall not be reëmployed under any circumstances except upon approval first obtained from this office. All vaccinators will be made cognizant of this report. Cedula numbers will be forwarded with above-mentioned advice of discharge.

26. *Consolidated report.*—Immediately after the end of each month, the chiefs of vaccinating parties will forward to the Director of Health, thru the district health officer of the province where the vaccination is being carried on, a consolidated report on Form No. 59, P. H. S. of all vaccinations and inspections accomplished during the month by their groups, and will note on the bottom of the report the amount of virus on hand on the first day of the month, the amount received during the month, the amount expended during the month, and the amount on hand on the last day of the month. All forms No. 36, P. H. S. (stubs) pertaining to each municipality will, when completed, be delivered to the municipal president or the municipal secretary as a report of the permanent records of such municipality.

INSTRUCTIONS TO THE CHIEF, VACCINATING PARTY.

1. *Map of town.*—Whenever practicable a map of the town should be secured and utilized for the proper distribution of the squads. Divide the town into as many districts as there are squads in the party, using the presidencia or other municipal buildings as the central point. By marking on the said map the number of houses and number of vaccinations performed in every block, reliable information may be obtained at the completion of the vaccination as to whether or not the whole population of said block has been vaccinated.

Ascertain whenever possible, the number of houses and the number of persons living in each barrio and, if in the poblacion, ascertain the number of houses and persons in each street, marking this information on the map.

While the vaccination is being conducted weekly entries of the number of vaccinations performed in each barrio or street shall also be made on the map in order to check whether the vaccination of a given barrio or street is completed.

2. *Distribution of squads.*—The squads composed of two vaccinators each shall also be marked by means of a small piece of paper pinned on the map corresponding to the place (barrio, block, or street) where the vaccinators are actually working.

3. *Office hours.*—The chief of the vaccinating party shall keep his office at the place or locality where the vaccination is being carried on, holding office only in those days necessary to prepare the reports and other official transactions devoting most of his days to field work.

4. *Inspection.*—The chief of the vaccinating party shall exercise a close supervision of the work of the vaccinators and shall see that the proper technic in performing the vaccination is employed by the vaccinators; that the certificates are issued properly and that the vaccine virus is not wrongly kept, spoiled or wasted.

5. *Monthly report.*—The chief of the vaccinating party shall keep a consolidated report of the vaccination for his guidance, this report to be based upon the weekly reports received by him from the squad leaders.

By keeping this report he will be able to properly check the number of vaccinations performed and make a more accurate estimate of the amount of virus needed every month.

6. *Consolidated report.*—This report has already been mentioned in paragraph 22 of this circular under the heading "Regulations for provincial systematic vaccination."

PROPER HANDLING OF VACCINE VIRUS IN THE PROVINCES.

7. *Ice-boxes.*—Whenever possible an ice-box of convenient capacity and sufficient amount of ice should be secured for the keeping of the vaccine virus.

If an ice-box is not available the following method may be utilized:

Get a piece of banana trunk about 30 cm. long and about 10 centimeters in diameter. Bore the center from the top down to at least 10 centimeters toward the bottom. After this is done there will be a cavity where the vaccine tubes with the cork tightly sealed by means of paraffin or wax may be placed with the mouth up.

Make several incisions on the upper surface of the trunk around the cavity and, covering the upper perforation properly by another piece of banana trunk, immerse the trunk containing the tubes in cool water. When wanted for use take the banana trunk from the water and get the tubes from inside the same.

Another way of keeping the virus in good condition is to put the tubes after being sure that they are tightly closed, inside a wide-mouthed bottle of about 60 c. c., capacity and keep the bottle full of cool water.

8. *Things that must be avoided.*—Do not expose the virus to the direct ray of the sun.

Do not keep the tube of virus in your pocket as the heat of the body will spoil it.

INSTRUCTIONS TO THE CHIEF VACCINATOR.

1. *Duties of the chief vaccinator.*—The chief vaccinator shall do no office work except making the daily entries of the work accomplished, calling the roll of vaccinators, and issuing supplies. For this work an hour is considered to be sufficient time.

2. Chief vaccinators shall make daily inspections of the work of the vaccinators, devoting to this work the most of their daily time, to determine the following:

(a) Whether all persons belonging to any one family or residing in any one house have been vaccinated.

(b) Whether the vaccinations were properly made.

(c) Whether the certificates were properly issued.

(d) Whether inspection is made on the eighth day after vaccination, whether or not they are positive.

(e) The chief vaccinator when making the inspection shall take with him all vaccinating materials to be able to perform the vaccination of persons who were not previously vaccinated by the vaccinators and the vaccination of those that were vaccinated but with negative results.

(f) An inspection is to be strictly made eight days after the first vaccination in order to verify that all the people have been positively or successfully vaccinated.

Office work shall be made only when so ordered by the chief, vaccinating party.

3. *When vaccination is completed.*—Report of complete vaccination in any block, street or barrio must not be made, unless every inhabitant therein has been vaccinated with positive results.

4. *Vaccinators' default.*—Any failure to comply with orders on the part of any vaccinator found by the chief vaccinator shall be reported to the chief of the vaccinating party for action.

5. *Distribution of virus.*—Care must be exercised by the chief vaccinators to prevent the virus being wasted or spoiled by the vaccinators. The amount of virus needed by each group of vaccinators for one day should be issued daily.

6. To see that the virus used is fresh and in good condition. Spoiled virus is not only useless but it is a discredit to the party using it. To keep a daily record of virus issued to each party.

7. *Empty tubes and tins.*—Empty tubes and tins must be collected from each vaccinator and returned immediately to the chief vaccinator as soon as practicable.

8. *Concentration of vaccination.*—Be sure that your vaccinators are all in the municipality or barrio where vaccination is to be performed.

9. *Parties.*—Divide the men into as many parties as possible. A party should be composed of two men, one to perform the vaccination and the other to prepare and issue the proper certificate.

10. *Conduct.*—See that your men behave gentlemanly with the people. Rough manners should not be permitted. Any vaccinator found to be guilty of any misbehavior, misconduct, or rough treatment of people should be suspended at once and the fact brought to the attention of the chief of the vaccinating party.

11. *Weekly report.*—Submit to the chief of the vaccinating party the total number of vaccinations during the week, the total number of inspections, the total number of positive inspections, the number of virus units on hand on the first day of the week, the amount of virus received during the week and the amount of virus on hand the last day of the week. The report therefore is to be consolidated every Sunday and sent to the chief every Monday.

12. *Traveling expenses.*—Do not incur in unnecessary traveling expenses. Transportation should not be used for inspection within a radius of 3 kilometers. Vaccinators are not entitled to traveling expenses except in going from one municipality to another municipality. Vaccinators within the municipality in which they work are entitled to traveling expenses only in exceptional cases in which the necessity of the service warrants the incurrence of the expenses.

INSTRUCTIONS TO THE VACCINATORS.

1. *Duties of vaccinators.*—Keep always in mind that you are a Government servant in the service of the public.

2. As you are dealing with the public you should be honest in carrying out all the orders received from your superiors.

3. Remember always that your employment does not authorize you to abuse your position as a vaccinator, but that you are only to enforce the requirements of the law.

4. Any person who while not exempted from vaccination refuses to be subject to said vaccination shall be warned of the requirements of the law (sections 1054 and 1056 of the Administrative Code), using kind and

gentle words. In case said person still refuses vaccination, his name and address should be taken and immediately reported to the chief vaccinator, who will take the matter up with the chief of the vaccinating party.

5. *Punishment of delinquent vaccinator.*—Any vaccinator who after due investigation is found guilty of abuse in the exercise of his official authority will be punished by a fine, the amount thereof to be deducted from his salary. Do not falsify the report.

6. *Working days and hours.*—Vaccinators are required to work not less than eight hours a day from 7 a. m. to 12 m., and from 2 to 5 p. m. each day except legal holidays.

7. *Number of vaccinators in each group.*—Each group of vaccinators shall be composed of two men. One will perform the vaccination and the other one shall issue the certificate. This work may be alternatively performed by the two vaccinators.

8. *Person and clothing.*—A vaccinator must be clean and neat in his person and clothing. His finger nails must be cut and kept clean. His hands should be frequently washed during the day.

9. *Conduct of vaccinators.*—Vaccinators shall conduct themselves with proper courtesy and consideration toward the public.

10. *Who shall be vaccinated:* (a) Newly born infants may and should be vaccinated.

(b) Children of all ages.

(c) Persons of all ages and both sexes.

11. *Who may not be vaccinated.*—(a) Persons of all ages afflicted with acute disease.

(b) Persons presenting satisfactory evidence of having been successfully vaccinated within the preceding 12 months (this fact may be evidenced by examining the scar) or having had an attack of smallpox during the preceding year.

12. *Diseases and other conditions not to be accepted as a cause for exemption from vaccination:* (a) Nervousness or "nervios."

(b) Hysteria.

(c) Pregnancy.

(d) Puerperium.

(e) Menstruation.

(f) Itch, eczema or other skin diseases.

(g) Tuberculosis.

(h) Infancy or old age.

Persons who claim that they should not be vaccinated on account of any of the above enumerated ailments or conditions should not be excused from vaccination.

13. *Method of performing vaccination.*—Scrub the site of vaccination with a pledget of cotton wet with alcohol; sterilize lancet in alcohol flames; after shaking tube of virus, take same on blade of lancet; make two superficial incisions about one-inch long and two inches apart, lengthwise of the axis of the arm, stretching the skin with one hand; rub virus into scarified area with flat of blade; warn person vaccinated not to touch scarified area, nor to allow clothing to do so until thoroughly dry, nor to put on it any sort of *patis*, *bagoong*, etc., nor wash the same with soap and water.

1. *Things that vaccinators should never forget.*—Do not carry the virus in your pocket or hold same for long time in the palms of your hands as the heat of the body will spoil its immunizing power.

2. Do not expose the virus to the sun rays as it will be destroyed.
3. Keep your virus in a cool place and in a proper container.
4. Do not let your lancet become rusty or dull.

As an illustration of the great difficulties that these vaccinating parties met in the performance of their duties the following is quoted from the report submitted by the Chief of Vaccinating Party No. 1, which is practically applicable to the others:

Lack of coöperation on the part of a great many people as the result of ignorance and superstition, constitutes the most serious drawback in the general vaccination.

The people in the provinces, especially those in the barrios are unlike those in the city. They have not had the necessary training to make them grasp the importance and benefit of a successful vaccination. Consequently a great many of these people show antagonistic spirit towards the work and not only avoid vaccination when they can, but often try to hinder the work of the party.

In some localities it is even hard for the vaccinators to get a drink of water on account of the belief of some that the vaccinators are poisoners.

The topographical conditions offer no small difficulty in performing the work. In a great many barrios the houses are set apart by small rivers, hills, and mountain ranges, making a distance of from one to three kilometers from one house to another.

Only in a few barrios can we find good water to drink, requiring a great many times to boil the water to make it fit for drinking, and since in most of the houses we find only one pot (palayok) for cooking their corn and another for cooking their fish, vegetables etc., for viands, it is only with great difficulty that the vaccinators can borrow something in which to boil water, causing a great deal of delay in proceeding with the work.

It has been found more advantageous to vaccinate three or four barrios at one time rather than concentrating the whole force in one barrio as was originally planned. For conducting the campaign in the original plan necessitates too much moving from barrio to barrio and thus the unnecessary frequency in transportation. Whereas by distributing the 20 men among three or four different barrios, instead of making three or four transfers only one is needed.

Complete vaccination and revaccination are impracticable if not impossible. A great many people are not found where they are expected to be found, coming home after the vaccinators have left the locality. Some intentionally escape vaccination, others refuse, making all sorts of pretexts, and still others are too sick to stand vaccination.

As to the percentage of positives among the groups of ages in the table it appears that it is in a direct proportion to the ages of the subjects up to 5 years, as follows:

	Per cent.
From 0 to one month.....	59
From one month to 1 year.....	64
From 1 year to 5 years.....	66
From 5 years to 10 years.....	59
From 10 years to 20.....	56
Over 20 years.....	61

I can only offer the following explanation:

There are only a few mothers who are convinced and are willing to sub-

mit their babies to the vaccination, and since they only have them vaccinated to evade the law a great many of them prevent the successful taking of the vaccine and thus the low rate of percentage of positives. Even some of the educated people think that a baby under one month is too young to be vaccinated.

Above one month the children are usually presented for vaccination up to the age of five years in which case they are the ones usually vaccinated.

A great many of those in the ages of from five to twenty years are probably immune from the vaccinations which they have received when still under that age.

Those above twenty years have a greater percentage of positives on account of the fact that they have not been undergoing vaccination since young, thinking themselves exempt from vaccination. As a proof of this they are often surprised when they learn that even they are subject to and are required to be vaccinated. The immunity which they may have acquired from previous vaccination when young must have been exhausted.

IX.

LABORATORIES.

Three more laboratories were established during the year in the provinces of Bohol, Palawan, and Sorsogon, respectively. The specimens examined in the provincial laboratories during the year are shown in the following Table L.

TABLE L.—*Laboratory work—specimens examined during the year.*

Province.	Blood.	Urine.	Secretions.	Sputum.	Faeces.	Others.	Total.
Abra *							
Albay							
Ambos Camarines	17	21		5	6	6	55
Antique							
Bataan *							
Batanes *							
Batangas	20	26		16	3,735	93	3,890
Bohol	4				89		93
Bulacan	9	25	4	10	4		52
Cagayan							
Capiz *							
Cavite *							
Cebu	197	11			8,329	21	8,558
Ilocos Norte *							
Ilocos Sur	10	24	1	19	27		81
Iloilo *							
Isabela *							
Laguna	7	2		3	18		30
La Union *							
Leyte	48	52		32	26	26	184
Mindoro	8	19	5	15	133		180
Mountain Province	84	83		20	76		263
Nueva Ecija	5	7		2	4	222	240
Nueva Vizcaya *							
Occidental Negros	14	37	3	11	29	149	243
Oriental Negros *					1		9
Palawan	3	5			1		9
Pampanga		20			5		25
Pangasinan	22	22		7	6	93	150
Rizal *							
Romblon *							
Samar *							
Sorsogon		30		8	20		58
Tarlac *							
Tayabas	65	114	4	169	120	409	881
Zambales *							
Total	513	498	17	317	12,628	1,019	14,992

* No laboratory.

The number of specimens examined during the present year in some provinces was less and in others more than in the past year, but the grand total in 1919 was less than that in 1918.

X.

MEDICAL RELIEF.

One hundred and eighty new public dispensaries were opened during the present year and 22 were closed, making a total in operation at the end of the year of 675 which are 158 more than those which were in operation in 1918 and 277 more than in 1917. In the number mentioned are not included the emergency hospitals established during the year, nor the isolation houses, though patients were also attended in them. Nevertheless, the great number of patients attended in the dispensaries during the present year was less than that attended in 1918. The difference is 68,498 adults and 60,921 infants.

This unpleasant fact resulting from a comparison of the statistics of dispensaries, is commented upon as follows:

First. It probably is due to the fact that the physicians and nurses of the sanitary personnel expended most of their available time in checking the epidemics registered, and could not therefore give sufficient attention to the public dispensaries.

Second. It might have so resulted because the people lost confidence in the physicians and nurses attending the dispensaries due perhaps to the fact that the people noted that said physicians and nurses did not show great interest in attending to their ailments; or, because the physicians did not go to the dispensaries on the hour and days assigned to attend them, or

Third. Because, due to the great quantity of disinfectants used in connection with sanitary work for the eradication of epidemics registered so that there was not sufficient money that could be expended for medicines, the patients could not be given free medicines at the dispensaries.

Explanation as to the above-mentioned points will be requested from the district health officers because no statement has been submitted in their annual reports explaining the cause of so great a decrease in the number of patients attended in the dispensaries during the present year.

It is not possible to admit as reason for said decrease that in 1919 the patients were less than in 1918, because the difference in the mortality rate between the years 1918 and 1919 is only three per thousand population. Therefore it can be accepted as a fact that the number of patients in 1919 should be the same as in 1918.

TABLE M.—Condensed report of dispensaries.

Province.	Consultations.		Treatments.		Operations.		Attendance at residence.		Total.		Public dispensaries.			
	Adult.	Infant.	Adult.	Infant.	Adult.	Infant.	Adult.	Infant.	Adult.	Infant.	In operation during 1918.	Opened during 1919.	Closed during 1919.	In operation at the end of 1919.
Abra	765	63	554	39	135	26	779	146	2,283	274	4			4
Albay	3,519	2,018	3,391	2,302	187	66	706	976	4,565	3,311	20			20
Amboas Camarines	2,097	1,141	4,360	2,271	430	214	111	71	6,998	3,697	1	10	6	6
Antique	500	100	410	60	30		200	100	1,140	260	1			1
Bataan	1,085	438	546	212	29		43	42	1,703	692		9		9
Batanes	159	81	111	159			75	69	378	192	5			5
Batangas	1,364	1,139	1,364	1,139	89	58	1,825	1,405	3,278	2,602	4	1	1	4
Bohol	2,587	738	2,592	584	88	47	283	218	5,399	1,559	35			35
Bulacan	6,880	3,270	10,410	5,557	522	319	955	924	17,967	10,070	59			59
Cagayan	62	37	49	36	5		37	45	153	171	5			5
Capiz	12,934	5,770	5,110	4,100	149	111	3,176	2,110	21,365	12,091	25	5		30
Cavite	1,532	1,123	1,965	1,548	169	56	426	147	3,090	2,874	14			14
Cebu	1,514	799	1,506	776	1		172	147	3,193	1,722	7			7
Ilocos Norte	121	23	49	13	14	3	233	309	375	316	1	15	1	15
Ilocos Sur	1,061	833	892	930	99	36	433	523	2,505	2,122	19			19
Ileilo	5,761	4,976	4,248	3,331	250	108	2,268	1,898	11,931	10,086	30	4		34
Isabela	343	216									12			12
Laguna	1,982	1,517	1,854	668	85	118	313	196	4,234	1,623	3	23		26
La Union	457	133	452	117	10	2	342	149	1,261	401	13			13
Leyte	4,045	1,022	3,615	1,004	189	28	1,276	1,674	9,125	3,728	45	1		46
Mindoro	516	407	544	378	3	41	1,128	189	1,179	1,013	4	5	1	8
Mountain Province	12,167	1,330	12,188	2,879	162	53	1,034	475	26,361	4,687	27	17		31
Nueva Ecija	3,881	1,681	3,881	1,681	14				3,895	1,681	17			34
Nueva Vizcaya	3,112	676	1,190	1,712	218	71	23	68	3,112	676	4			4
Occidental Negros	7,839	3,280	5,901	2,534	338	124	1,483	1,054	15,146	6,992	25	1		26
Oriental Negros	680	83	1,574	548			680	548	83	631	11			11
Palawan	158	50	1,707	148	40	13	123	20	2,023	231	5	3	2	6
Pampanga	1,374	1,106	442	42	2				1,378	1,148	36	21		21
Pangasinan	4,403	1,556	4,056	1,302	286	73	658	316	5,000	1,691	36	20	11	26
Rizal	2,297	1,941	1,911	1,205	90		827	511	2,297	1,951	21	20		41
Romblon	10	3	6		1		2	1	19	4				1
Samar	447	162	539	114	54	35	106	61	1,055	350	5	9		14
Sorsogon	206	228	206	228	11		91	93	514					9
Tarlac	800	387	992	277	38	6	131	66	1,961	719	16			16
Tayabas	1,671	483	1,358	473	183	15	594	349	3,756	1,820	27			27
Zambales	1,696	106	1,347	106			56	12	1,696	1,105	13			13
Total	90,025	38,898	80,028	38,460	3,871	1,626	19,842	14,447	172,887	81,206	517	180	22	675

There is no doubt that the benefit of public dispensaries is not only for sanitary purposes for the reason already stated on page 124 of the Annual Report for 1918, but also, on account of the charitable work that they represent, principally for indigent persons in time of epidemics.

Without the free distribution of medicines many patients will die completely abandoned and without any treatment or attendance.

For these reasons this office insists that the physicians and nurses employed in this Service should perform strictly such charitable and sanitary work, attending punctually the public dispensaries.

XI.

INFANT WELFARE.

Data given in Table M of the Annual Report for 1918 are not in accordance with the data given in Table M of this report because some district health officers included in last year's report some "puericulture centers" with woman's clubs, which in the present year have already been separated.

The number of woman's clubs, puericulture centers, welfare dispensaries and "Gotas de Leche" in operation in the present year is greater than that of last year.

Woman's clubs and puericulture centers were organized with the end to collect funds by voluntary contributions to be expended, under the technical direction of the district health officers, in activities directed toward the reduction of high infant mortality that is registered throughout the Islands.

It should be stated with regret that practically very few of the woman's clubs succeeded in accomplishing the end proposed.

Diligent woman's clubs or puericulture centers give, through their nurses and physicians, instruction and treatment to parturient and pregnant women, as well as instruction for the care and feeding of infants.

TABLE N.—*Infant welfare.*

Province.	Number of women's clubs.		Number of puericultural centers.		Number of maternity wards.		Number of gotas de leche.		Number of dispensaries.		Number of baby contests celebrated.		Number of sanitary exhibitions.		Number of cooking contests.		Number of puericultural centers submitting reports as per by-laws.	
	1918	1919	1918	1919	1918	1919	1918	1919	1918	1919	1918	1919	1918	1919	1918	1919	1918	1919
Abra.....	1	13							1	4		1						
Albay.....	5	6																
Ambos Camarines.....	12	7									1							
Antique.....	2	1																
Bataan.....	2	1							1	1								
Batanes.....	6	6							3	3								
Batangas.....	16	26																
Bohol.....	44	44			1				2	2							2	7
Bulacan.....	7	23							6	6	5	11						
Cagayan.....	3	3	2	2					4	7								
Capiz.....	1	1																
Cavite.....	17	20	1	1	1	1	1	1	36	49	6	2						
Cebu.....	12	3							19	19		1						
Ilocos Norte.....	7	5							2	31	2	3						
Ilocos Sur.....	7	9	7	8														
Iloilo.....	2	11							2	3	2	2					2	2
Isabela.....	4	1																
Laguna.....	4	6	1	1					2	2								
La Union.....	4	3	2	3														
Leyte.....	1	1	2	2														
Mindoro.....	1	1	2	2					2	2								
Mountain Province.....	6	6	6	6														
Nueva Ecija.....	5	5							2	5		1						
Nueva Vizcaya.....	21	24	2	2					1	1	2	3					2	2
Occidental Negros.....	2	2							2	2	2	1						
Oriental Negros.....	2	2							1	1								
Palawan.....	4	4																
Pampanga.....	47	39	2	1					36	26	8	6					2	1
Rizal.....	9	4	3	2					9	9	7	7			1	9		
Romblon.....	1	1							1	1								
Samar.....	3	4																
Sorsogon.....	4	2																
Tarlac.....	8	8									1						1	
Tayabas.....	12	3	3	8					8	3	1	3						
Zambales.....	2	1																
Total.....	275	296	33	41	2	1	12	15	163	204	36	45	7	3	1	9	9	12

XII.

MORTALITY BY PUERPERAL STATE.

TABLE O.—*Mortality by puerperal state.*

Province.	1919	1918	1917	1916
Abra.....	15	14	16	16
Albay.....	145	190	140	131
Ambos Camarines.....	130	198	108	108
Antique.....	35	39	42	55
Bataan.....	13	28	20	24
Batanes.....				
Batangas.....	1,721	276	149	139
Bohol.....	123	133	132	100
Bulacan.....	64	130	72	93
Cagayan.....	69	59	39	43
Capiz.....	87	129	80	71
Cavite.....	46	86	52	76
Cebu.....	243	306	207	191
Ilocos Norte.....	85	84	61	58
Ilocos Sur.....	59	84	56	60
Iloilo.....	138	225	202	176
Isabela.....	25	32	19	15
Laguna.....	90	105	64	90
La Union.....	33	35	39	33
Leyte.....	172	166	60	48
Mindoro.....	22	14	1	18
Mountain Province.....	14	11	13	8
Nueva Ecija.....	102	99	65	82
Nueva Vizcaya.....	17	12	17	15
Occidental Negros.....	146	167	185	156
Oriental Negros.....	59	99	86	54
Palawan.....	2	4	14	24
Pampanga.....	96	161	83	123
Pangasinan.....	235	254	158	206
Rizal.....	41	67	63	54
Romblon.....	22	42	28	25
Samar.....	110	132	109	90
Sorsogon.....	111	134	104	59
Tarlac.....	76	106	80	48
Tayabas.....	110	132	118	114
Zambales.....	20	25	19	24
Total.....	4,476	3,778	2,701	2,627

(See Table O.) This tabulation has been prepared with a view to compare the mortality registered by puerperal state with the work done by district nurses and midwives.

The mortality by puerperal state should decrease in proportion to the efficiency of the work done by district nurses and midwives, and if this ought to be the case, it may be stated that, having registered in 1919 more deaths by puerperal state than in the previous years, the work done by the said employees of the service in the present year was less efficient than that done in the previous years, and this fact is more evident if it is taken into consideration that in the present year the number of nurses employed was 84 while only 60 were employed in 1918.

But it should be taken into consideration that the district nurses during the present year attended not only the patients hospitalized in the emergency hospitals and isolation houses established, but also worked as vaccinators and medical examiners of school girls which largely diverted their efforts from their proper work and is in a large measure responsible for the above results.

TABLE P.—Work of the district nurses during the year.

Province.	Abortions.		Normal deliveries.		Dystocias.		Post Parturms.		Infants attended under two years feeding.				Lectures.			
									Breast.		Artificial.		Public.		Private.	
	1918	1919	1918	1919	1918	1919	1918	1919	1918	1919	1918	1919	1918	1919	1918	1919
Abra.....																
Albay.....																
Ambos Camarines																
Antique.....	8		20	18									6	20	57	163
Bataan.....		4		25		2				25						50
Batanes.....																
Batangas.....																
Bohol.....	2			9	2					40						64
Bulacan.....	57	24	144	132	33	39	44	226	504	330	153	255	71	68	1,572	2,001
Cagayan.....	1			6						24		11		5		8
Capiz.....	10		18		5		24		14		5		64		276	
Cavite.....																
Cebu.....	8	4	677	1,691	20	24	17	30	677	1,641	50	20		8	677	1,691
Ilocos Norte																
Ilocos Sur.....	1		6	6	1											
Iloilo.....	17	2	13	9	3	1	5		39	18	25	8	38	44	62	67
Isabela.....																
Laguna.....	7		4	35	2	3			135	18	56	2	22	19	58	36
La Union.....	3			2						19		1		4		
Leyte.....	2			1				6		90		11		2		1,713
Mindoro.....																
Mountain Province	4		45	37	11	1	3	8	36	18	32	7	17	18	368	213
Nueva Ecija.....	1	3	7	15			20	44	165	108	10	17			400	106
Nueva Vizcaya.....	2	17	6	94	2	5			5	149	2	6	34	24	32	178
Occidental Negros	16	37	51	147	8	17	3	30	240	511	100	233	18	101	385	389
Oriental Negros.....	1															5
Palawan.....	5		34	30		3	1		29	28	4	2	2	7	48	40
Pampanga.....	5		36	27					278	517	18	7	2	132	90	132
Pangasinan.....		2	92	61	9	5			1,706	2,159			521	763	5,816	4,877
Rizal.....																
Romblon.....																
Samar.....																
Sorsogon.....																
Tarlac.....																
Tayabas.....	13	17	1,057	1,161	33	36	1,075	978	626	822	40	90	14	6	40	402
Zambales.....																
Total.....	153	128	2,210	2,510	127	133	1,192	1,325	4,457	6,547	499	687	818	1,317	10,050	12,185

(See Table P.) In spite of the fact that the nurses have done more varied work in the present year, their work as nurses was of more intensity than in 1918, as can be seen in Table P, and therefore it is not possible to explain why they have attended more parturient women in 1919 than in 1918. Deaths attributed to puerperal state increased in 1919 over 1918. Perhaps the explanation might be found in the abnormal conditions existing in the provinces in the present year due to the prevalence of epidemics which interrupted the work of the district nurses and that during such interruptions it was not possible for the nurses to attend accidents of labor.

XIII.

MEDICAL INSPECTION OF SCHOOLS.

TABLE Q.—*Medical inspection of schools.*

Province.	Number of schools inspected.	Number of pupils inspected.	Number of schools not inspected.	Number of pupils not inspected.	Disposal of excreta.		
					Antipolo system.	Septic tank.	Pail system.
Abra	42	3,447	5	905	14		19
Albay	125	10,955	5	3,380	31	4	2
Ambos Camarines	64	7,763	18	1,583	194	30	5
Antique	77	9,637	16	1,250	76		
Bataan	34	3,635	1	278	7		
Batanes	8	1,033			4	1	
Batangas	54	5,502	66	8,852	18	20	31
Bohol	127	13,155	51	3,095	136		
Bulacan	122	16,655	36	3,023	87	2	
Cagayan	71	8,293	23	3,193	14		68
Capiz	41	12,528	82	12,870	82		15
Cavite	55	10,907					3
Cebu	132	19,323			19	7	14
Ilocos Norte	6	1,594	15	976			44
Ilocos Sur	135	17,950	9	1,742		1	19
Iloilo	115	10,060	63	6,980	2	2	131
Isabela	14	2,153	73	9,443			
Laguna	64	11,284	36	6,087	35		
La Union	66	12,066	22	2,200	11	50	25
Leyte	220	20,013	111	10,684	217	14	21
Mindoro	24	843	39	4,052	8		25
Mountain Province	105	8,110	26	1,520	2		55
Nueva Ecija	79	13,203	46	1,429			99
Nueva Vizcaya	25	2,315	3	50			56
Occidental Negros	119	17,018	34	5,807	69	11	23
Oriental Negros	91	8,647	5	107	21		
Palawan	13	1,148	2	82	2		5
Pampanga	58	8,510	68	5,633			8
Pangasinan	119	80,972	256	19,496	23	7	27
Rizal	69	10,353	19	1,899	228	19	
Romblon							
Samar	83	8,695	70	1,984	63		2
Sorsogon	39	3,828	28	2,135	131		
Tarlac	92	9,903	39	7,727	8		21
Tayabas	89	19,798	32	4,310	21	4	4
Zambales	25	3,044	22	2,750	13		
Total	2,603	334,340	1,321	135,522	1,536	172	700

(See Table Q.) Two thousand six hundred three public schools were inspected during the year as against 1,418 inspected in the past year.

The pupils examined in 1919 were twice the number examined in 1918.

Inspections were performed by the doctors employed in this division assisted by nurses. They were made to determine not only the physical fitness of pupils, but also the sanitary condition of school buildings and toilet facilities.

With reference to the sanitary condition, almost all schools were found in excellent condition, except those housed in buildings rented for school purposes.

Disposal of excreta was very much improved during the present year. One thousand five hundred thirty-six Antipolo systems, 172 septic tanks and 700 pail systems were newly installed as against 403 Antipolo systems, 113 septic tanks and 280 pail systems reported as installed last year.

In order to make uniform the work of inspection of schools and physical examination of the scholars, the following circular was issued:

PHILIPPINE HEALTH SERVICE.

MANILA, June 11, 1919.

CIRCULAR }
R-44. }

To all district health officers, presidents of sanitary divisions, presidents of municipal health districts, and presidents of boards of health.

In Circular M-33, dated October 10, 1914, was ordered the annual inspection of schools and physical examination of the scholars.

1. It will be one of the duties of the presidents of sanitary divisions, presidents of municipal health districts, and presidents of municipal boards of health themselves to perform, or through their sanitary employees, the physical examination of the pupils of all schools established within the municipalities embraced by their sanitary divisions at least once at the beginning of the school course, and as often thereafter as may be necessary.

2. The president of sanitary division will keep in his official file a card (Form No. 1, inclosed) of every scholar examined.

3. A report on P. H. S. Form No. 14 for every school shall be sent to the district health officer after every physical examination of all the pupils has been completed.

4. District health officers shall compile all the reports of physical examinations submitted by their presidents of sanitary divisions and said report shall be included in the annual report of their health districts.

5. If in the physical examination of scholars any of them are found suffering from any disease which requires their exclusion from school, the case shall be treated either by a private physician, or by the president of sanitary division in case of indigent pupils.

6. In case that the scholars excluded desire to be treated by a private physician a card (Form No. 1), herewith inclosed, shall be sent to the private physician, who should note on the same the treatment followed and result obtained. The same procedure shall be followed in case the scholar-patient is treated by the president of sanitary division.

7. If the case treated by the president of sanitary division requires bacteriological investigation, specimens shall be sent to the provincial laboratory, if there is any, or to the Bureau of Science, through the Director of Health.

8. In the physical examination of scholars special attention should be given to the following defects:

Improper care of teeth;

Defects of vision;

Curvedures, and

• Hypertrophy of the tonsils.

Instructions for the care and correction of these defects shall be given to the scholars, and also strongly recommended to be attended by a specialist.

9. If any scholars are found suffering from any communicable disease they shall be excluded from the school, notifying the parents or tutor and the principal of the school of this action, and such scholars, shall not be permitted to return to school without a physician's certificate in which he certifies that they have recovered and are not dangerous to the public health.

10. The physical examination of the scholars shall extend to the teachers and other employees in the schools, and in case any of them are found suffering from any communicable disease they shall not be permitted to attend the school and the Superintendent of Schools shall be notified of this action.

11. An inspection of the school buildings with regard to light, ventilation, drainage, over-crowding, configuration of the desks, water supply, sanitary facilities, common drinking glass, etc., etc., shall be made at the same time as the examination of the scholars, and a report of the conditions found shall be submitted to the district health officer, who will forward at the same time a condensed report of same to the Director of Health.

It is requested that the receipt of this circular be acknowledged.

(Sgd.) V. JESUS,

Acting Director Health.

In regard to the physical examination of scholars, the following Table R shows the number of pupils examined and the affections found:

TABLE R.—*Medical inspection of school children.*

Province.	Number of pupils inspected.	Diseases found.						Number of pupils excluded.	Treated.			
		Scabies.	Tonsils.	Conjunctivities.	Per-tussis.	Contagious skin diseases.	Contagious eye diseases.		Dental caries.	Total.	At dispensaries.	At home.
Abra	3,447	164	89	4		2	2	374	70	560	159	401
Albay	10,955	308	41	28		328		1,535	443	1,000	895	105
Ambo Camarines	7,763	253	64	65		59	42	1,325	103	1,101	1,055	46
Antique	9,637	117	3	5			2	999	124	1,101	353	748
Bataan	3,635	299	7	46	2	470	44	962	57	1,101	1,095	6
Batanes	1,033			2		65	14	4	19	104	95	9
Batangas	5,502	475	39	31	208	140	11	1,009	63	1,006	833	173
Bohol	8,155	243	597	33		260	18	1,306	697	840	381	459
Bulacan	16,655	463	350	82		388	10	6,265	142	330	330	
Cagayan	8,293	427	2	49				840	148	350	74	276
Capiz	12,528	200	7	35		10		558	810	810	565	245
Cavite	10,907	396	1,282	129			67	686	436	877	515	362
Cebu	19,117	890	420	262		658	1,814	2,477	3,362	2,603	1,625	978
Ilocos Norte	1,594	31				2	96	2	38	7	5	2
Ilocos Sur	17,950	632	129	75		148	51	1,406	199	893	473	420
Iloilo	10,060	302	1	37		28	119	3,399	236	146	146	
Isabela	2,153	111	163	5		5	1	514		850	850	
Laguna	11,284	349	267	18		84		1,591	435	375	332	43
La Union	12,066	433	385	23				1,074	457	418	379	39
Levite	20,013	640	919	76	590	590	372	2,727	337	1,336	1,231	105
Mindoro	843	645	47	26		57	69	433	46	574	385	189
Mountain Province	8,110	248	28	81	3	260	21	186	42	485	423	62
Nueva Ecija	13,203	506	771	16	2	85	8	3,435	615	4,970	1,856	3,114
Nueva Vizcaya	2,315	152	3	14		25	205	3	45	205	60	145
Occidental Negros	17,018	485	45	40	90	52	46	3,577	798	1,988	1,801	187
Oriental Negros	8,647	152	108	136	2	2	3	453	29	1,594	287	307
Palawan	1,148	46	6	1		13	3	111	37	198	198	
Pampanga	8,510	457	157	18		170	4	1,313	457	457	457	457
Pangasinan	20,972	878	204	16	95	115	441	3,119	860	1,932	965	967
Rizal	10,353	535	80	41		115		3,720	637	4,997	4,895	102
Romblon												
Samar	8,695	68	204	557	2	1,085	85	1,683	111	1,547	267	1,280
Sorsogon	3,828	105				16	25		103	415		415
Tarlac	9,903	232	10	3	1	186	13	1,969	135	376	249	127
Tayabas	13,798	511	39	11	4	182	8	5,449	604	526	352	174
Zambales	3,044		31	173		497	122	533		1,203	1,203	
Total	324,134	11,573	6,498	2,182	1,000	5,937	3,435	55,006	12,681	36,275	24,332	11,943

Pupils suffering from any affection or disease were attended to by the district health officers, presidents of sanitary divisions and nurses at public dispensaries or at home.

The Bureau of Education appointed in the present year about 40 nurses as "Hygiene School Inspectors" and their duties were regulated by the rules given in the following circular:

PHILIPPINE HEALTH SERVICE.

MANILA, *July 26, 1919.*

CIRCULAR }
R-59. }

To all district health officers:

For information and guidance of district health officers, General Instructions No. 33, series 1919, of the Bureau of Education is transcribed herewith:

"THE WORK OF SCHOOL NURSES.

"To division superintendents:

"1. The school nurses recently assigned to a number of divisions are under the direct control of the division superintendent of schools.

"2. The duties of these nurses should be specifically outlined by the division superintendent, and their hours of work fixed. In general their duties will consist of doing everything possible to improve health conditions among pupils. They may be required to examine pupils in school and give treatment to such pupils, and to visit them in their homes.

"3. Furthermore, these nurses should be advisors to teachers on matters relating to school sanitation. In their visits to homes they should also, in a tactful way, give suggestions concerning the improvement of home sanitation when such suggestions are needed.

"4. Arrangements have been made with the Bureau of Health to furnish simple remedies and supplies for the use of these nurses. Provincial governments should supplement these by appropriations from the provincial health fund. In many cases it will, probably, also be desirable to have municipal governments furnish supplies and medicines. Any instruments which are necessary should be furnished by provincial governments. In time of epidemics or of special need due to any cause, special requests for medicines may be forwarded to the Bureau of Health through this office.

"5. While the school nurse is entirely under the control of the division superintendent of schools, the division superintendent, it is believed, should consult with and coöperate with the district health officer to such an extent as is necessary in order to secure the best results in the employment of the school nurse.

"6. In case where children are either suffering from disease or show evidence of having inadequate or improper nourishment, the school nurse will investigate home conditions and give advice, following up the advice with visits to see that the advice is followed.

"7. Some suggestions as to specific duties of nurses:

(a) Inspection of health condition of pupils and students. The aims are to avoid contagion and development of diseases in their early or unsuspected stage, and to advise parents of such diseases so that adequate treatment may be given. These aims will be attained through inspection

of the eyes, and other organs which are known to be commonly attacked by diseases among children of school age. (Division Circular No. 25, s. 1919, Zambales.)

(b) Inspection of physical condition of school rooms to see that they are properly lighted and ventilated; of the sitting accommodation of children specially to see that the benches or desks are not too high nor too low; of proper placing of children suffering from short or farsightedness, color blindness, defective hearing, or those who are very young members of the class. (Division Circular No. 25, s. 1919, Zambales.)

(c) The relation of this supervisor with the teachers of the division will be similar to that which now exists between teachers and the industrial and academic supervisors. When occasion demands the supervisor will be authorized to spend part of periods, which are otherwise assigned to recitation, in inspecting children physically. He will represent the division superintendent in making suggestion in order to carry out adequately the duties above enumerated. (Division Circular No. 25, s. 1919, Zambales.)

"(d) Sample remedy packages have been prepared for the provinces of Antique, Bataan, Cavite, Isabela, Mindoro, Samar, Sorsogon, Tarlac, Union, and Zambales. Medicines needed by nurses assigned to the provinces should be obtained from the District Health Officers by school nurses. (Philippine Health Service.)

"(Sgd.) LUTHER D. BEWLEY,
Acting Director of Education."

It is requested that District Health Officers coöperate fully with the purpose in the above circular.

(Sgd.) V. JESUS,
Acting Director of Health.

XIV.

WATER SUPPLY.

There were 387 artesian wells newly drilled during the year 1919 as compared with 361 drilled in the past year. Two thousand five hundred is the total number of artesian wells in operation at the end of the present year.

The statement made with reference to the water supply on page 131 and Table R of the Annual Report for 1918 was corrected due to the fact that many district health officers reported as sanitary dug wells, wells which were not covered to protect them against contamination.

After further consideration the district health officers have been instructed that only wells at least 15 feet deep, with the walls built of cement or stone and cement, with a top made also of cement and a pump to draw the water, should be considered as surface sanitary wells.

Of the 34,975 sanitary dug wells reported as sanitary in the past year only 60 can be considered as such under the above description. Therefore in the report for the present year only those artesian wells and water works systems which furnish safe water for drinking purposes have been considered.

TABLE S.—*Water supplies.*

Province.	Total population.	Artesian wells.			Waterworks.				
		Number at the end of 1918.	Drilled during 1919.	Total.	Population served.	Nmber at the end of 1918.	Estab-lished during 1919.	Total.	Popula-tion served.
Abra.....	68,728								
Albay.....	369,333	25		25	27,000				
Ambos Camarines.....	258,554	64	6	70	110,000				
Antique.....	139,812								
Bataan.....	47,995	127	21	148	30,000				
Batanes.....	8,390								
Batangas.....	361,548	106	5	111	165,000			2	10,000
Bohol.....	369,886	28	14	42	80,000	4		1	5
Bulacan.....	251,923	194	51	245	150,000			1	1
Capiz.....	161,909								
Cebu.....	228,811	95		95	85,000				
Cavite.....	134,678	59	10	69	80,000				
Ilocos Norte.....	938,674	94	106	200		1		1	20,000
Ilocos Sur.....	233,789	9	5	14	25,000				
Iloilo.....	234,548								
Iloilo.....	465,563	27	2	29	315,000	1		1	25,000
Isabela.....	79,711	6		6	10,000				
Laguna.....	162,030	127	33	160	80,000	1		2	3
La Union.....	140,829	3		3	2,000				
Leyte.....	599,918	7	8	15	14,000				
Mindoro.....	55,210	13	2	15	10,000	1		1	10,000
Mountain Province.....	189,666	3		3	1,500				
Nueva Ecija.....	135,996	76	45	121	80,000				
Nueva Vizcaya.....	27,428	19		19	18,000				
Ocidental Negros.....	307,198	232	13	245	106,000				
Oriental Negros.....	194,821	3	3	6	7,000				
Palawan.....	33,075								
Pampanga.....	226,859	310	1	311	119,000				
Pangasinan.....	463,234	125	23	158	110,000				
Rizal.....	149,894	162	14	176	127,000	1		1	15,000
Romblon.....	60,063	4		4	6,000			1	1
Samar.....	311,939	7	1	8	6,000	1			
Sorsogon.....	194,930	42	2	44	94,000				
Tarlac.....	180,925	102		102	83,000				
Tayabas.....	257,652	40	23	63	27,000	2		2	4
Zambales.....	60,821	4		4	4,000				
Total.....	7,998,684	2,113	387	2,500	2,120,000	12	9	21	260,000

NOTE.—“Population served” refers to the estimated number of persons using this type of water.

From a study of the data noted in Table S it can be deduced that over 2,200,000 persons or 28 per cent of the total population corresponding to this division use safe water for drinking purposes while the remainder use unsafe water taken from insanitary dug wells, rivers, unsafe springs and rain water.

Slight improvements have been made during the present year for the purpose of making more extensive the establishment of safe water supplies for drinking purposes, but it can also be established that the steps taken in previous years by the district health officers with reference to this point continued this year.

If 62 per cent of the population of the provinces make use of unsafe water for drinking purposes, it is not a surprise to know that dysentery, typhoid fever, cholera, diarrhoea and enteritis, and other so-called water-borne diseases cause the loss of so many lives in the provinces every year, as has been reported.

XV.

SANITARY MARKETS AND SLAUGHTERHOUSES.

Seventy-seven public markets were constructed during the present year, making an increase of 14 over those of the past year. Of these newly constructed markets, 22 are provided with water supply and 55 without water supply. One hundred and nine slaughterhouses were newly constructed in 1919 as against 24 constructed in 1918. Of these 13 are provided with water supply and 96 have none.

The markets and slaughterhouses provided with water supply are built of concrete or stone while those not provided with water supply are only provisional, using light material in their construction.

At the end of the year there existed in the provinces comprised by this division 165 public markets and 96 slaughterhouses provided with water supply and 409 markets and 294 slaughterhouses without water supply provision, making a total of 574 markets and 380 slaughterhouses.

The sanitary maintenance of the markets and slaughterhouses is controlled in the same manner as was reported in the past year, although not many improvements have been made in the present year.

TABLE T.—Sanitary markets and slaughterhouses by provinces.

Province.	Number of markets in 1918.			Number of slaughterhouses in 1918.			Number of markets built in 1919.			Number of slaughterhouses built in 1919.		
	With water supply.	Without water supply.	Total.	With water supply.	Without water supply.	Total.	With water supply.	Without water supply.	Total.	With water supply.	Without water supply.	Total.
Abra.....		1	1		4	5						
Albay.....	3	9	12	1								
Ambos Camarines.....	2		2	2	1	3						
Antique.....		2	2				2		2			
Bataan.....	2	1	3									
Batangas.....	6		12	2	2	4					2	2
Bohol.....	4	27	31	6	6	12					1	1
Bulacan.....	9	4	13	4	13	17		2	2		20	20
Cagayan.....	1	9	10	4	2	6						
Capiz.....		38	38		8	8					3	3
Cavite.....	3	2	5		35	35		2	2		1	1
Cebu.....	13	48	61	7				2	2			
Ilocos Norte.....	4			4	12	21		4	4			
Ilocos Sur.....		18	18		4	4					13	13
Iloilo.....	10	50	60	6	18	24					6	6
Isabela.....		4	4		20	20					1	1
Laguna.....	3	3	6	1	1	2						
La Union.....	2	2	4	1	4	5		1	1		1	1
Leyte.....	8	5	13	3	5	8		4	4			
Mindoro.....	1		1									
Mountain Province.....	2	2	4	2								
Nueva Ecija.....	5	14	19	5	10	15		1	1		1	1
Nueva Vizcaya.....		5	5		5	5		2	2		2	2
Occidental Negros.....	8	32	40	3	3	6		3	3		22	22
Oriental Negros.....	4		4		4	4						
Palawan.....												
Pampanga.....	10		10								1	1
Pangasinan.....	18	31	49	15	22	37					3	3
Rizal.....	3	17	20	4	5	9		1	2		1	1
Romblon.....	1	3	4	1	1	2		3	3			
Samar.....	4		4									
Sorsogon.....	1	2	3					1	1		21	22
Tarlac.....	5	7	12	2	5	7					1	1
Tayabas.....	10	15	25	9	2	11						
Zambales.....	1	6	7		9	9		1	1			
Total.....	143	354	498	83	198	281	22	55	77	13	96	109

XVI.

DISPOSAL OF EXCRETA.

Owing to the great importance of this matter it is regretted to state that not many improvements have been made with reference to the attainment of sanitary and safe disposal of excreta in the provinces.

The majority of the municipal councils of the municipalities embraced by this division persist in their indifference in this very important matter of sanitation and though the district health officers and presidents of sanitary divisions reproduce each year the draft of a municipal ordinance for the establishment of a safe and sanitary disposal of excreta, it is put on the table for consideration, but the time passes, the year is finished, and the ordinance has not yet been considered.

In those municipalities in which the ordinance has been approved, it is not enforced, and consequently the results are the same as in those municipalities in which the ordinance has not been considered.

Thirty-nine thousand nine hundred and ninety-three closets of the Antipolo system type were newly installed in private premises and 596 in public buildings during the present year, but these have been obtained rather by the insistent and educational work given by the sanitary employees than by the enforcement of the municipal ordinance providing for a sanitary disposal of excreta.

Three thousand one hundred thirty-four new septic tanks were installed in private and 345 in public buildings. These figures have not been considered as correct because this office classifies as septic tanks vaults constructed of two or more tight concrete basins receiving the sewage from the house through a plumbing system and are likewise connected with the water-closet or flush-closet, but it has been noted that some health officers also classify as septic tanks other systems that more properly can be called "pit systems" or tight vaults, which, as is known, are dirty and insanitary. It may be said therefore that from the number of closets classified under septic tanks and so reported in the present year, 1,000 should be deducted from the number reported.

During the popular fiestas celebrated in the present year, 1,508 temporary sanitary closets, principally of the type called the "pit system," were established as against 371 that were established last year.

The majority of the sanitary disposal of excreta systems installed during the year in public buildings, were in public schools, municipal presidencies and hotels.

XVII.

CEMETERIES.

The new cemeteries opened during the year as well as those closed are noted in Table V of this report.

The cemeteries of many municipalities of the provinces need much improvement. The majority of them, especially the municipal cemeteries, do not comply with the regulations of cemeteries and remain, as has been reported in the last year, as places for pasturing of animals rather than a place for eternal sleep of our beloved ancestors.

TABLE U.—*Disposal of excreta by provinces.*

Province.	Antipolo system ordinances.		Private.				Public places, including markets, schools, hotels, and municipal buildings.				Population served.	Temporary sanitary closets at fleas.	Remarks.
	In force.	Pending.	Antipolo systems in use.		Septic tanks in use.		Antipolo systems in use.		Septic tanks in use.				
			1918	Newly built.	Total.	1918	Newly built.	Total.	1918	Newly built.				Total.
Abra			1	87	88						2,521	4	
Albay	14		13,594	13,594	28	1	29	128		128	84,800	6	
Ambos Camarines	15	26	441	402	843	441	441	186		186	28,833		
Antique	5	6	22	456	478	4	4	18	53	71	8,480		
Bataan	1	9	69	69		2	2	6	6		1	1	6
Batanes	2	1		468	468			2	14	16	2	2	7,573
Batangas	3	17	18	7	25	55	45	100	1	13	14	37	43
Bohol	35	1	9,996	6,591	46,587	9	9	83	58	141	45,000		75
Bulacan	10	12	399	48	447	56	9	65	162	19	181	15	13,660
Cagayan													81
Capiz			920	1,503	2,423	22	22	119	83	202	99,005		
Cavite	4	15	647	482	1,139		10	10	2	2	4		
Cebu	23	13		84	84		174	174	25	25		9	9
Ilocos Norte	5	10	4		4		1	1				1	1
Ilocos Sur	19	14		8	22	12	7	19	13	13			5
Iloilo	5	14	20	51	71	288	250	538	32	31	63	254	
Isabela	12			2,014	2,014	4	4		17	17	36,812		
Laguna	19	9	845	497	1,342	167	136	308	33	13	46	8	12
La Union	8	4	321	25	346		801	801	291	7	298	39	17,032
Leyte	31	15	674	730	1,404	14	289	303	12	18	30	2	39
Mindoro			30	73	103		37	37		13	13	14	16
Mountain Province												2	2
Ince	4	17	12	29	41	46	2	48	6	3	9	3	20
Nueva Ecija	6	20	204	2	206	24	24	28	6	7	13	2	830
Nueva Vizcaya	6	4		40	40								2
Occidental Negros	23			2,398	3,740	85	368	453	21	104	125		16,069
Oriental Negros	22	2	1,847	4,144	4,144	15	46	61					24
Palawan	4		107	107									14
Pampanga	8	7	760	7	767	34	47	81		5	5		3
Pangasinan	19	11	1,557	3,199	4,756	34	256	290	29	11	40	1	21
													45,337
													29

Rizal	26	3,102	7,802	10,904	539	89	628	17	2	19	15	15	77,871	55
Romblon	2		5	23		1	1	12		12			2,440	3
Samar	8	18	4	25	16		16	5	48	53	1	1	311,939	20
Sorsogon	9	2	2,150	3,080	4	8	12		13	13	6	6	5,690	
Tarlac	2	8	6	55	11	1	12		7	14	3	3		14
Tayabas	24		6,500	11,282	80	113	193	17	22	39	10	12	35,250	7
Zambales		7			1		1				2	2		
Total	354	267	39,993	110,661	1,548	3,134	4,682	1,202	596	1,798	142	345	949,492	1,598

Sixteen of the Anti-polo systems were destroyed by typhoon in 1918.

TABLE V.—Cemeteries—number, location and classification.

Province.	Number of cemeteries in operation at the beginning of year.				Number of cemeteries opened during the year.				Number of cemeteries closed during the year.				Number of cemeteries in operation at the end of the year.			
	Roman Catholic.	Filipino Independent.	Protestant.	Municipal.	Roman Catholic.	Filipino Independent.	Protestant.	Municipal.	Roman Catholic.	Filipino Independent.	Protestant.	Municipal.	Roman Catholic.	Filipino Independent.	Protestant.	Municipal.
Abra.....	11	5	—	9	3	—	—	6	—	—	—	—	14	5	—	15
Albay.....	29	2	2	8	—	—	—	—	—	—	—	—	29	2	2	8
Ambo Camarines.....	40	—	—	—	—	—	—	—	—	—	—	—	40	—	—	8
Antique.....	22	4	7	16	2	—	—	3	—	2	—	—	24	—	7	19
Bataan.....	14	4	—	6	—	—	—	—	—	—	—	—	14	4	—	5
Batanes.....	5	—	—	—	—	—	—	—	—	—	—	—	5	—	—	3
Batangas.....	24	1	3	15	2	—	—	—	—	—	—	—	26	1	3	15
Bohol.....	56	12	2	43	6	—	—	34	—	—	—	—	57	12	2	77
Bulacan.....	28	3	5	23	—	—	—	—	5	—	—	—	28	3	5	23
Cagayan.....	16	7	4	33	1	2	—	11	—	—	—	—	17	9	4	34
Capiz.....	28	4	—	14	4	—	—	3	1	—	—	—	31	4	3	25
Cebu.....	18	6	8	15	2	—	—	11	—	—	—	—	20	6	8	15
Ilocos Norte.....	11	8	2	18	1	—	—	2	—	—	—	—	89	5	9	27
Ilocos Sur.....	26	9	7	18	—	—	—	1	—	—	—	—	12	8	2	18
Iloilo.....	48	6	7	48	16	2	1	22	—	—	—	—	26	10	8	19
Isabela.....	27	14	2	7	—	—	—	—	1	—	—	—	63	8	7	70
Laguna.....	15	4	1	30	1	—	—	—	—	—	—	—	27	14	2	7
La Union.....	12	—	—	12	2	—	—	1	3	—	—	—	14	4	—	29
Leyte.....	64	5	—	25	2	—	—	1	1	—	—	—	11	—	1	12
Mindoro.....	18	5	—	5	—	—	—	—	—	—	—	—	65	5	—	26
Mountain Province.....	8	5	1	90	10	—	—	2	1	—	—	—	17	5	3	91
Nueva Ecija.....	17	6	—	32	1	—	—	2	2	—	—	—	18	6	—	34
Nueva Vizcaya.....	6	2	2	9	1	—	—	1	1	—	—	—	7	3	2	9
Occidental Negros.....	18	4	4	50	1	—	—	1	1	—	—	—	18	3	4	51
Oriental Negros.....	19	1	7	23	—	—	—	1	—	—	—	—	19	1	8	23
Palaawan.....	9	—	—	2	—	—	—	—	—	—	—	—	9	—	—	2
Pampanga.....	24	1	1	31	2	—	—	—	—	—	—	—	26	1	—	31
Pangasinan.....	41	10	4	42	—	—	—	1	2	—	—	—	41	10	5	44
Rizal.....	30	5	2	24	4	—	—	3	1	—	—	—	34	8	2	29
Romblon.....	5	—	—	14	—	—	—	1	—	—	—	—	5	1	—	15
Samar.....	23	—	—	13	2	—	—	2	—	—	—	—	23	2	—	8
Sorsogon.....	27	—	3	16	—	—	—	—	—	—	—	—	40	—	3	17
Tarlac.....	10	1	1	18	3	1	—	1	—	—	—	—	10	2	—	21
Tayabas.....	30	1	2	26	1	—	—	4	3	—	—	—	31	1	2	30
Zambales.....	11	6	2	7	—	—	—	1	1	—	—	—	10	5	2	8
Total.....	874	141	84	761	84	14	11	114	20	5	1	4	938	150	94	871

XVIII.

SANITARY ORDERS AND PROSECUTIONS.

If the table mentioned above is compared with its similar (V) in the Annual Report for 1918, it will be noted that the number of sanitary orders issued as well as the number of persons prosecuted was greater in the present year than in the past year.

This intensity of the campaign undertaken by the health officers against the infractors of the sanitary regulations resulted in an increase of sanitary closets installed and improvements made in insanitary premises. But if the number of persons prosecuted is compared with the number of persons sentenced, it is regretted to state that the coöperation that was expected in the present year from the municipal authorities has not yet been obtained.

TABLE W.—Sanitary orders issued and persons prosecuted for non-compliance with sanitary orders, regulations, or laws.

Province.	Number of sanitary orders issued.	Causes for which issued.						Results.						
		Insanitary premises.	Domestic animals.	Unprotected foods and drinks.	Disposal of excreta.	Barber shops.	Dance halls.	Other infractions.	Number of orders complied with.	Number of persons prosecuted.	Fined.	Sentenced to imprisonment.	Admonished.	Acquitted.
Abra.....	45	30	10	---	1,188	1	3	5	45	37	7	---	---	30
Albay.....	2,810	633	245	709	1,188	11	---	31	2,646	164	34	26	99	6
Ambos Camarines.....	219	72	90	7	---	---	---	---	142	37	4	31	---	2
Antique.....	186	14	13	12	12	---	---	145	136	10	---	---	---	10
Bataan.....	189	77	25	21	---	---	---	26	128	61	13	47	---	1
Batanes.....	190	116	---	---	74	---	---	---	130	---	---	---	---	---
Batangas.....	1,199	589	224	169	172	14	2	29	898	301	89	25	163	24
Bohol.....	2,324	1,071	120	150	656	---	---	327	2,064	260	75	24	144	17
Bulacan.....	83	---	---	8	3	---	---	72	31	53	31	1	16	5
Cagayan.....	2,684	723	21	31	504	6	---	72	2,373	147	101	1	36	9
Capiz.....	332	81	73	76	98	2	---	2	290	41	41	---	---	---
Cavite.....	706	8	463	24	84	---	---	127	417	56	56	---	---	---
Cebu.....	163	15	62	24	118	4	---	56	431	119	52	27	25	15
Ilocos Norte.....	470	162	928	62	21	---	---	94	1,735	1,025	36	76	908	5
Iloilo.....	5,497	2,044	1,029	514	1,692	30	19	242	3,182	1,858	158	54	1,341	105
Isabela.....	1,691	405	---	---	1,286	---	---	---	1,689	2	2	---	---	---
Laguna.....	1,320	716	210	126	248	---	---	20	877	131	105	6	---	9
La Union.....	508	165	78	80	127	---	---	58	203	306	41	8	244	13
Leyte.....	3,855	2,030	350	479	819	8	7	163	1,109	1,173	143	77	731	222
Mindoro.....	410	291	50	29	99	---	---	32	316	96	6	---	90	25
Mountain Province.....	269	2	64	8	23	---	---	18	123	133	32	2	14	---
Nueva Ecija.....	445	261	6	97	80	---	1	---	443	2	2	---	---	---
Nueva Vizcaya.....	3,110	1,896	539	217	342	3	---	116	2,930	180	93	2	---	85
Occidental Negros.....	1,758	127	179	182	610	3	7	50	1,576	1,052	515	24	426	87
Oriental Negros.....	55	10	---	2	5	3	---	45	20	2	10	10	---	25
Palawan.....	2	---	---	---	1	---	---	1	---	---	---	---	2	---
Pampanga.....	97	1	6	1	---	---	---	89	---	94	73	5	3	13
Pangasinan.....	15,826	9,031	890	986	4,185	49	5	680	15,191	380	216	94	50	20
Rizal.....	3,446	181	143	441	2,426	71	2	182	5,050	1,136	142	7	856	131
Romblon.....	11	7	1	2	---	---	---	---	8	---	1	---	---	---
Samar.....	623	512	72	8	5	---	---	26	593	42	33	8	---	1
Sorsogon.....	154	52	32	24	32	3	7	4	154	65	50	---	15	---
Tarlac.....	151	89	14	24	12	1	---	11	139	12	4	1	7	---
Tayabas.....	1,745	624	254	198	504	69	3	93	1,400	260	79	11	162	8
Zambales.....	---	---	---	---	---	---	---	---	---	---	---	---	---	---
Total.....	54,091	23,091	5,378	5,585	15,437	275	56	2,771	46,411	9,281	2,304	567	5,543	867

XIX.

PUBLICITY.

The publicity work done in the present year was carried on with more intensity in barrios than in schools. This is due to the fact that the lectures given by the sanitary personnel of this Service in the public schools in previous years were given by the nurses appointed as hygiene inspectors of schools by the Bureau of Education.

In the Province of Pangasinan 5,233 lectures were given by the district nurses in the past year while only 80 were given in the present. This was due to the existence of a cholera epidemic in Pangasinan and the district nurses were therefore detailed to attend the patients in the emergency hospitals instead of attending the routine work.

Besides these public lectures on sanitary topics given by doctors and nurses, exhibitions of sanitary matters were made in connection with the celebration of fiestas, fairs, garden days, clean-up week, etc., with the end that the people may familiarize themselves with sanitary measures and understand the importance of sanitation.

Several district health officers held their annual assembly of the presidents of sanitary divisions and district nurses on the same date fixed for the convention of municipal presidents, and in this convention several important subjects on sanitation were discussed.

The Service is grateful to Dr. L. R. Thompson, Passed Assistant Surgeon, U. S. Public Health Service and Chief Quarantine Officer for the Philippine Islands, for the preparation of Health Bulletin No. 20 in which Dr. Thompson has condensed in 46 pages an excellent plan for health organization, expounding in a clear and concise form how health officers can effect automatic control of the health conditions within their respective jurisdictions and undertake measures to prevent the outbreaks of dangerous communicable diseases. A brief of said plan was advanced on pages 144 to 153 of the Annual Report for 1918.

Health Bulletin No. 21, entitled "Management of Communicable diseases" was prepared by the Chief of this Division. Its presentation is made, transcribing as follows the foreword of said bulletin:

"This bulletin is nothing but a compilation from standard treatises on hygiene and sanitation. There is, therefore, but little original matter, if any, in the book, but it contains in an abridged form about all that is known and practiced nowadays in connection with the management of commu-

TABLE X.—*Publicity campaign.*

Province.	Lectures given.										Attend- ance.
	In schools.			In barrios.			In other places.				
	D. H. O. ^a	P. S. D. ^b	D. N. ^c	D. H. O. ^a	P. S. D. ^b	D. N. ^c	D. H. O. ^a	P. S. D. ^b	D. N. ^c		
Abra	1	41			40			5		2,000	
Albay		110			99			52		28,880	
Ambos Camarines		5	4					6	5	3,155	
Antique	12	1		23	11					5,550	
Bataan	4	34		6	16		1	10		2,041	
Batanes	9			6			2			907	
Batangas		11			18			3		(d)	
Bohol	2	41	45		99		10	33	42	13,177	
Bulacan	6	12	68		53	1,285	43	17	716	34,810	
Cagayan	7	33	7		68	1		9		7,818	
Capiz	41	67			65					23,360	
Cavite										(d)	
Cebu	1	26		30	23	14	82	7	5	(d)	
Ilocos Norte		3		8	16		1	1		2,306	
Ilocos Sur		149	21		218	52	1	104	38	46,102	
Iloilo		98			164	9	3	179		24,710	
Isabela	20						12	6		(d)	
Laguna		30	19	17	48	18	6	49	4	14,085	
La Union		91		8	162		3	59		37,500	
Leyte	20	104	2	20	146		18	2		21,305	
Mindoro	24	21		71	114		2		1,713	1,943	
Mountain Province	43	20	19	44	38	12	15	2	5	3,695	
Nueva Ecija	5	20	1	1	15			7		10,449	
Nueva Vizcaya	40	184	90	31	295	47	78	15		24,403	
Occidental Negros	6	57	54	3	81	43	12	74	56	22,000	
Oriental Negros	4	1	4	3	3	2				1,165	
Palawan			19	10	3	24	7		10	(d)	
Pampanga	2	22		45	53	132				7,857	
Pangasinan		154		2	376	690	3	74	80	57,030	
Rizal		51		3	122			78		15,897	
Romblon	1	3			8					(d)	
Samar	10	48		6	45					4,925	
Sorsogon	4	4		4	16		1	13		1,500	
Tarlac	4	78	14	7	48	4	2	13	34	(d)	
Tayabas	12	24	1		122			49		25,515	
Zambales	3	17			2	6				(d)	
Total	281	1,560	368	402	2,599	2,339	224	1,000	2,723	444,035	

^a D. H. O. = District health officers.^b P. S. D. = Presidents sanitary divisions.^c D. N. = District nurses.^d = The number of attendance is not reported.

able diseases. The purpose of the bulletin is to enable health officers to have at all times a reference resumé of modern public health work which will serve them as a guide in routine sanitary practice.

(Sgd.) V. DE JESUS,
Acting Director of Health."

XX

CONCLUSION.

TABLE Y.—*Home gardens established during the year.*

Province.	Number of premises.		Number of persons to whom seeds were distributed.		Number of home gardens actually planted.	
	1918	1919	1918	1919	1918	1919
Abra		28,272		28,444		28,404
Albay	2,632	25,626	2,534	4,569	2,922	18,312
Ambos Camarines					8,538	
Antique	3,768		2,487		1,867	1,091
Bataan	2,440	3,290	556	1,976	776	1,683
Batanes	185	246	928	850	185	225
Batangas	14,489	5,329	2,988	5,329	14,788	5,329
Bohol	14,065	27,300	6,443	3,904	5,587	8,666
Bulacan	3,601	549	3,601	549	3,601	549
Cagayan					9,171	
Capiz	6,912	9,210	6,912	6,960	6,037	7,010
Cavite	1,545	2,466	2,653	2,271	1,045	335
Cebu	3,136	9,408	650	1,950	3,136	9,408
Ilocos Norte	127,265		5,382		102,761	
Ilocos Sur					36,249	2,452
Iloilo	4,552	11,280	2,907	2,406	5,188	7,802
Isabela	4,009				1,778	
Laguna			950	322	5,906	3,474
La Union	3,132	7,720	5,266	2,788	9,146	19,611
Leyte	2,061	4,413	1,696	205	1,089	14,173
Mindoro	1,194	2,424	417		326	837
Mountain Province	1,655	19,871	1,957	1,863	1,476	2,285
Nueva Ecija	5,312	3,084			5,312	3,084
Nueva Vizcaya	3,334	4,404			1,155	2,319
Occidental Negros	17,869	19,000	287	5,881	12,792	6,320
Oriental Negros					772	1,001
Palawan	352	564	680	961	285	502
Pampanga	18,110	18,995	13,050	13,709	9,055	9,964
Pangasinan	34,212		7,827	4,941	52,737	66,317
Rizal	2,270	4,061	1,692	1,815	1,342	3,499
Romblon	280	4,423		250	280	4,423
Samar	4,500	1,111	20,224	8,593	4,445	696
Sorsogon	2,034	5,209	1,669	5,104	1,482	2,701
Tarlac			162		18,229	3,836
Tayabas	3,275	1,191	6,562	2,671	5,275	1,766
Zambales				15	7,449	5,509
Total	288,089	219,446	100,480	108,833	341,410	243,856

Data furnished in Table Y were taken from the information given by the Bureau of Agriculture inspectors who were carrying out the campaign of increased food production in the present year.

Very little coöperation has been done in the present year by the personnel of this Service because the eradication of epidemics did not allow any time to work in the increased food campaign.

Most of the plants raised in the home gardens were vegetables, such as beans, mongo, lettuce, pechay, raddish, corn, etc.

XXI.

CLEAN-UP WEEK.

In the present year the clean-up week was held from December 13 to December 20 under the direction of the Public Welfare Board.

Contests for prizes to be awarded to those persons or institutions presenting the cleanest conditions were instituted.

It is to be stated here that the public schools have played the most important part in the work and without exception all the public schools of the provinces were found clean during the week, and the Service appreciates and is grateful to all the Insular and municipal teachers for the great activity they have shown.

On the contrary, it is regretted to state that, generally speaking, the municipal authorities (not all) did not seem to have any interest in it.

Practically in all the provinces of this division the clean-up week was carried out under the following program:

The Public Welfare Board appointed provincial committees composed of the provincial governor as chairman and provincial officials as members, and those provincial committees appointed municipal committees with the municipal president as chairman.

Under the supervision of the municipal committee designated in each town, the members of said committee would direct their efforts to advise the people of each municipality to accomplish the following work during clean-up week:

1. To cut all grass, weeds and brush that may be found in yards or on vacant lots and to dispose of the same so that these places will present a clear and clean appearance.
2. To construct fences and repair those already in existence.
3. To see that public buildings and the homes of the people are cleaned, whitewashed or painted.
4. When possible to open ditches to provide drainage for places filled with standing water and to fill with dirt or gravel all mud-holes and wallows in and about homes, giving special attention to insanitary places under "batalans."
5. To repair and clean stables and places where cows, goats and poultry are kept and to construct pigpens.
6. To clean toilets and to look after the destruction of all offensive matter by fire at a safe distance from buildings.
7. To sweep and clean the interior of all houses and especially the kitchens and dining rooms; to scour and clean all pots, pans, crockery, water jars and other utensils which come into contact with food.

XXII.

CLOSING REMARKS.

The health organization in the provinces received special aid and support from the Central Office and from the provincial boards in the eradication of epidemics, and especially from the Bureau of Education, through its municipal and Insular teachers. The Bureau of Constabulary also rendered unconditional and excellent coöperation during such campaigns.

The great unrest felt by the personnel of the Service, as was stated in the report of last year, due to the low scale of salaries, is more apparent in the present year because the cost of living is higher now than before and it is believed that they remain in their positions only for the sake of patriotism and humanity.

If this situation cannot be remedied, no great improvement can be expected in the sanitary activities because the Service will be compelled to work with untrained personnel from whom neither efficiency nor success can be expected in general sanitation and principally in the prevention of epidemics.

Of the recommendations made in the Annual Report of the past year only the following have been considered with results noted:

I. WITH REFERENCE TO HEALTH ORGANIZATION.

(a) A bill was submitted to the Legislature centralizing the Service. The proposed bill was put on the table for consideration by the next Legislature.

(b) The project of the creation of a "Training School of Sanitation" for commissioned and non-commissioned officers in the Service was studied by the Council of Hygiene who gave favorable recommendation. Appropriation for said purpose will be included in the estimated appropriation for this Service for 1920.

(c) The division of the Islands into five sanitary districts of inspection, creating the position of five district inspectors was approved and the district inspectors will be appointed, effective as of January 1, 1920.

The other recommendations remain under study.

In submitting this report, it is desired to state that if any faults have been exposed that were supposed to have been committed either by the personnel of this Service or by local authorities, it was not intended to hurt anybody's feelings, nor was it the intention to criticize other's work or policy, but simply compelled by the spirit of duty to talk frankly for the sake of the Service.

As a final closing remark of the present report, the following statement made by Mr. W. C. Rankin in the Fire Association Life Institution, President for 1919—a statement that should always be borne in mind by the employees of this Service, is quoted:

Good health and good government are the two essentials of a great and permanent civilization. These conditions are reciprocal and complementary. Neither can exist without the other.

XXIII.

RECOMMENDATIONS.

The recommendations made in the Annual Report of this Service for 1918 are reiterated in the present report, adding two more, submitted by the district health officer of Bulacan.

First. That the municipal councils be authorized to donate properties or money to any society undertaking the work of protection of infants in the same locality as outlined in Circular No. 1 of the Secretary of Public Instruction, amending section 2248 of the Administrative Code.

Second. Fixing the limit of obligatory age for children in small-pox vaccination to 7 days instead of after three months old which is the age limit required as obligatory in the Administrative Code.

XXIV.

EXTRACTS FROM THE REPORTS OF THE DISTRICT HEALTH OFFICERS.

As a stimulous for the work that the district health officers should undertake with enthusiasm for the safety of the public health, a brief of the annual reports submitted to the Central Office by each of them follows:

FIRST HEALTH DISTRICT, PROVINCE OF BATANES.

(Assistant Sanitary Inspector FORTUNATO DE LEON, *Acting District Health Officer.*)

ORGANIZATION.

This province is one of those provinces having a special organization for its government, and there is no physician to attend its small population.

An Insular sanitary inspector is assigned as acting district health officer with residence in the capital, and dispensary attendants are the only sanitary personnel in the province.

FINANCIAL STATEMENT.

No sum has been appropriated either by the municipalities or the province for sanitary purposes and the Insular Government has given a sum of ₱3,200 as an aid to this province.

VITAL STATISTICS.

The transportation facilities in the Islands constituting this province are very meager on account of their geographical situation and no data can be obtained with regularity and certainty from the municipalities, and as a consequence the data on total mortality as well as on infant mortality as reported in Table C are incomplete.

Deaths from convulsions are reported in much greater number than from other causes, either non-communicable or communicable diseases, but this fact is not singular knowing that no physician exercises his profession in this province and no scientific personnel is available for correct diagnosis.

MEDICAL RELIEF.

Five public dispensaries are maintained in this province in which over 500 persons were attended during the year. No institutions are organized with regard to the care of pregnant women and infant welfare, and no nurse or midwife is working in this province.

WATER SUPPLY.

The people use river and spring water for drinking and other domestic purposes.

DISPOSAL OF EXCRETA.

The pit system is the most common system used as disposal of excreta in this province. Only four Antipolo closets have been established in four public schools.

 SECOND HEALTH DISTRICT,
MOUNTAIN PROVINCE.

(Medical Inspector GAVINO VINLUAN, M. D., *District Health Officer.*)

ORGANIZATION.

This health district is composed of six subprovinces, and to each of these there is assigned a doctor with the rank of assistant surgeon as subdistrict health officer.

In the capital of each of these subhealth districts there is a small hospital attended by the subdistrict health officer and two nurses, except the hospital in Bontoc (the largest) in which there is a resident physician and six nurses.

There is assigned one or more dispensary attendants or sanitary inspectors in each township and rancheria besides the personnel of doctors and nurses above-mentioned.

FINANCIAL STATEMENT.

No appropriations are made either by the province or municipalities as contribution to the health fund of this health district. All the expenses incurred for sanitary and medical purposes in this health district are paid from the Insular fund. The aid extended to this province by the Central Government in the year 1919 amounted to the sum of ₱110,000.

VITAL STATISTICS.

No accurate data can be obtained in this health district with regard to vital statistics. The population of this health district is divided into Christians and non-Christians, and in accordance with the last official census there are 47,824 of the former and 202,199 of the latter, also called Igorot tribes.

One-half of the population of the Subprovince of Lepanto-Amburayan is Christian and the other half Igorots; but in the other subprovinces only the Government employees, missionaries, and merchants are Christians, the remainder of the population being Igorots.

Igorots live a primitive life as nomads and it is not yet possible to apply strictly to them the rules referring to statistical data which can only be obtained among the Christian people. Nevertheless the health officers of this health district are exerting great efforts in attracting these people to civilized life and it is believed that such efforts will be crowned with success.

For the above reasons no comment is made with reference to vital statistics, referring the reader only to Tables from C to T of this report.

COMMUNICABLE DISEASES.

During the last days of the year 1918 cases of cholera were registered in the municipalities of Tagudin, Ludipen, Santol, San Gabriel, and Alitem, whose majority population are Christians. In Tagudin cholera reappeared in the beginning of October and again disappeared about the middle of November.

Smallpox was also registered but this disease attacked equally the Christian and non-Christian people.

VACCINATION.

Sometimes it was necessary to request the aid of the police force to enable the health personnel to perform vaccinations among the Igorots, but generally speaking, the majority of the Igorots presented themselves for vaccination.

MEDICAL RELIEF.

Public dispensaries and hospitals are generously scattered throughout this health district as a measure of attraction of Igorot people.

Two woman's clubs were established among the Christian population, one in Tagudin and the other in Cervantes, which have undertaken a campaign with regard to reduction of infant mortality and to instruct mothers in the proper care of children.

WATER SUPPLIES.

The municipalities of Tagudin and Bontoc are the only ones throughout this province that have artesian wells. The remainder are using spring water.

DISPOSAL OF EXCRETA.

An ordinance enforcing the construction of Antipolo closets in public and private buildings has been presented to the provincial board, but this board refuses to adopt it, believing that such ordinance is as yet too premature for Igorot people. The Christian people use water closets or pit systems.

MISCELLANEOUS.

The local authorities and the public have coöperated up to the present time with the health officers in all the management of public health affairs but in some places the people were hostile to sanitary measures, and only after considerable discussion and counsel did they agree to comply with the requirements of the health officers.

THIRD HEALTH DISTRICT,
ILOCOS NORTE PROVINCE.

(Senior Surgeon BONIFACIO MENCAS, M. D., *District Health Officer.*)

ORGANIZATION.

Senior Surgeon Francisco Ontañon was in charge of this health district from January 1st to April 29th, on which date he was relieved by Senior Surgeon Bonifacio Mencas.

This health district is divided into the same number of sanitary divisions as last year. In 1918 there were only two doctors in this health district, while in the present year four doctors have been appointed, one for each sanitary division.

The methods employed to secure information in public health matters consist of submitting daily and weekly reports, either by mail or telegraph, to the office of the district health officer.

FINANCIAL STATEMENT.

The first thing to be mentioned under this subject is the poor condition of the health fund due to the low income of the province, so that even the health officer is anxious to introduce improvements, but it is impracticable due to the mentioned cause.

Nine thousand seven hundred sixty-eight pesos and eighty-four centavos was the sum appropriated by the municipalities as contribution to the health fund, while only ₱4,025 was the sum appropriated by the province, making a total of ₱13,793.84 as the sum appropriated for sanitary purposes in 1919. The population of this health district is 218,951 according to the last census of 1919, resulting that ₱0.06 per capita is the contribution paid to said fund by the population.

VITAL STATISTICS.

The loss in population during 1919, if compared with the population in 1918, was due to the fact that the death rate was higher than the birth rate. This high death rate was due to the victims caused by the epidemics of smallpox and cholera registered in this province.

The total death rate and infant mortality rate in this health district have been increasing progressively since 1916, which fact is explained by the district health officer as a consequence of the successive epidemics of dysentery, smallpox and cholera prevailing in the previous years, as well as influenza in 1918.

The causes of the low birth rate and marriage rate cannot be definitely explained, but it is indubitably true that the low rate of marriage led to the low rate of births, and the decrease in the number of marriages probably may be attributed to the high cost of living in this province.

Malaria, convulsions and congenital debility give the highest rate per 1,000 deaths. Other causes of death give a low rate of not higher than 24 per cent. In comparing the average death of the noted diseases to those

of former years, it may be seen from Table G that all of them have been decreased and that their average is lower than for the corresponding years of 1916, 1917, and 1918.

COMMUNICABLE DISEASES.

The number of deaths registered from avoidable diseases is very nearly double that registered in the past year in spite of 1769 deaths from influenza registered in 1918, against only 33 in 1919.

This great number of deaths from communicable diseases was due principally to cholera, smallpox, and tuberculosis.

Cholera.—The outbreak of this disease began in August and lasted till November. Only four municipalities of the fifteen of the province escaped infection.

Three hundred seventy-six per 100,000 population was the morbidity-rate and 76.7 the fatality rate. No emergency hospitals were established to attend patients and to this fact is due the high infant rate registered. Routinary measures were taken to control the epidemics.

Smallpox.—The smallpox epidemic was a continuation of that of 1918 and the last cases were registered in October.

After the epidemic of influenza the epidemic of smallpox became stronger, "and may be," said the district health officer, "due to the low resistance of the people caused by an attack of influenza."

The measures employed for the eradication of this disease were as follows: systematic vaccination, hospitalization, and home isolation of cases.

The general morbidity rate was 3,629 per 100,000 population. Four thousand seven hundred seventy six cases were hospitalized, of which 1,051 died, giving 21.6 per 1,000 as fatality rate. Among the non-hospitalized cases, 50.70 per cent was the fatality rate. Of the 8,486 cases registered 6,104 were infants under seven years of age.

Dysentery.—In July an outbreak of dysentery appeared, infecting eight municipalities, but it did not assume large proportions and in September was considered as extingushed. The morbidity rate was only 34 per 100,000 population and 23 per cent the fatality rate.

Influenza.—There was no epidemic of influenza during the present year, but only sporadic cases.

Rabies.—Twenty-six persons were bitten by infected rabic dogs and of this number 5 persons died. The number of persons bitten is too high in comparison with those bitten in the past year. All persons bitten received the antirabic treatment. The treatment of those persons who died was not administered in time due to failure to identify the infection in its early stages.

There are ordinances in force regarding the muzzling of dogs, but they are not enforced by the municipal authorities.

Leprosy.—Only three lepers were captured during the year. It seems that only very few lepers are scattered throughout this health district.

VACCINATION.

There were performed by the provincial and municipal authorities, not including the vaccinations performed by the vaccinating party assigned to this health district, 432,614 vaccinations, or more than one and one half times the total population of the province. If to this number of vaccinations performed is added those performed by the vaccinating party, it may be said that twice the entire population of the provinces has been vaccinated

during the present year. These data may be considered as true only if it is admitted that several vaccinations were performed in the same person in a large number of instances.

MEDICAL RELIEF.

There was not a single public dispensary established in the province until the month of November, in which month 15 were established.

Of the emergency hospitals established to attend smallpox cases, three were burned by the people in order to prevent the patients from being hospitalized. The objections of the people to be hospitalized were that in these hospitals no nurses were detailed to attend the patients, and that they had to cook their food, wash their clothes, etc., due to lack of servants in the mentioned hospitals. These facts were true in part, but they were due to lack of funds appropriated by the municipalities or province for the maintenance of said emergency hospitals and to the fact that a sufficient number of nurses could not be obtained to serve in these hospitals. Nevertheless, patients were better attended in these hospitals than they could have been attended in their homes, because of the extension of the epidemic and the small number of doctors available in the province—only 7 for 200,000 souls—the doctors obviously could not have made house-to-house visits, visiting patients, but in the emergency hospitals it was possible to effect this work more easily.

The sanitary personnel of this province has not devoted much time to infant welfare work, and due to lack of district nurses no work was done towards the reduction of mortality caused by puerperal state.

MEDICAL INSPECTION OF SCHOOLS.

Of the 164 public schools scattered throughout the province, only six could be inspected, because almost all the activities of the sanitary personnel were devoted to the eradication of epidemics. The schools inspected were found in good sanitary condition.

WATER SUPPLIES.

In the whole province only 15 artesian wells were drilled during the year, and with the exception of the one in Badoc, the water has to be drawn from all of them with a pump.

Only an average of 21 per cent of the population in the province are using safe water for drinking purposes. The remainder of the population use river or dug well water. Some families have accustomed themselves to collect rainwater during the rainy season, but they are very few.

DISPOSAL OF EXCRETA.

As shown in Table U only about 40 families are using sanitary systems for disposal of excreta, or an average of 0.1 per 1,000 population.

An ordinance regarding the enforcement of the Antipolo system has been submitted to all municipalities since 1918, but only 4 municipalities have approved it.

The reason that only 4 municipalities approved this ordinance is that it is not generally known how to build the Antipolo system of toilets, or because the level of the town is very low and easily flooded, or because of lack of materials; but such reasons cannot be accepted as adequate because all these difficulties have been solved in Bulltin No. 17 of this Service. The description of the Antipolo system toilet was transcribed in the annual report of this Service for 1918 on pages 134 and 136.

MISCELLANEOUS.

The temporary sanitary personnel of this health district was increased during the epidemic.

One vaccinating party, composed of one doctor and 20 Insular vaccinators was assigned to this province for the eradication of the smallpox epidemic.

The establishment of more public dispensaries and maternity wards were not possible during the present year, because the attention of the health personnel was concentrated on and the health fund expended in the eradication of epidemics.

The equipment for a provincial laboratory is about to be completed, but due to lack of a suitable place for its installation, it has not yet been instituted.

The municipality of Laoag is the only one during the year that applied for a loan from the Postal Savings Bank for the construction of a water works system.

During the epidemics several lectures were given by the district health officer and the presidents of sanitary divisions in public places, instructing the people how to prevent contracting diseases and asking their full coöperation towards the eradication of epidemics.

Clean-up week was carried out with good results.

FOURTH HEALTH DISTRICT,
PROVINCE OF ILOCOS SUR.

(Surgeon MARCIANO CRISÓLOGO, M. D., *District Health Officer.*)

ORGANIZATION.

The fourth health district was composed in the year 1918 of the Province of Ilocos Sur and the Subprovince of Abra, but the Subprovince of Abra having been organized in the month of March as an independent province and separated from the former health district and constituted the fifth health district, there remained only the Province of Ilocos Sur in the fourth health district.

Surgeon Marcelo Crisólogo was in charge of the fourth health district until September 16, 1920, on which date he was temporarily relieved by Surgeon Antonio Fernandez.

This health district is organized into 5 sanitary divisions and each one of them is under the charge of a qualified doctor. There are also two district nurses and 20 provincial sanitary inspectors employed by this province.

The methods for obtaining information as to sanitary matters are the mail and telegraph. Communication amongst the municipalities is very easily effected overland because the roads within this province are all first-class roads adapted to automobile traffic, but during the rainy season traffic is sometimes interrupted owing to lack of bridges over some rivers.

FINANCIAL STATEMENT.

Ten thousand six hundred twenty-nine pesos and ninety-eight centavos was appropriated by the municipalities which amount added to the ₱8,000 appropriated by the province makes a total of ₱18,629.98 as appropriated by both the province and the municipalities, which sum constituted the

health fund of the province for the year 1919. As, in accordance with the census for 1919, 217,410 is the population of this health district, it results that ₱0.08 is the contribution per capita in this province for sanitary purposes.

VITAL STATISTICS.

The population for this health district, as noted in Table C, is not in accordance with that noted in the past report for 1918 because the population pertaining to Abra has been deducted.

The total death rate as well as the infant mortality rate show an increase if compared to those of the past four years.

The birth rate and the marriage rate remained stationary if compared with the same data pertaining to the year 1918, or there was a decrease in the birth rate and an increase in the marriage rate, if compared with the previous years.

None or little explanation is given by the district health officer as to the reasons for these facts, but it may be established that the same reasons given by the district health officer of the third health district, a neighboring health district, are also applicable to this health district.

The number of deaths caused by convulsions, congenital debility, acute bronchitis, and malaria remains practically the same in each year which proves that proper steps or investigation had not been taken to arrive at a true study of their diagnosis.

Diarrhea and enteritis show an increase in 1919 which probably is due to the fact that many cases that died of cholera were reported as diarrhea and enterities.

COMMUNICABLE DISEASES.

Dysentery.—Dysentery prevailed in this province with a tendency to decrease since 1918. The morbidity rate in 1919 was 132 per 100,000 population and the mortality 70 per cent.

Cholera.—The last cases of cholera were reported in February and appeared again in July with 10 municipalities infected. In September the infection had spread to eleven more municipalities, but in November the epidemic was completely controlled. The morbidity rate was 670 per 100,000 population and the mortality rate 67 per cent.

Smallpox.—The smallpox epidemic was the continuation of the last year's epidemic, which took a large toll in deaths, especially in the municipalities of Cabugao, Laoag, and Vigan, registering a total of 3,369 cases with 1,732 deaths during the year more than those registered in 1918, making a morbidity rate of 1,729 per 100,000 population and a mortality rate of 51 per cent.

Influenza.—Influenza continued with epidemic character during the month of February and sporadic cases continued registering during the whole year. Two thousand eight hundred ninety cases were reported of which 295 died, making a morbidity rate of 1,334 per 100,000 population and a mortality rate of 9 per cent.

No changes have been noted in statistics with regard to tuberculosis.

No special sanitary measures were established for the control of epidemics, except routine measures.

In Vigan emergency hospitals for attendance of smallpox and cholera cases were established, and one vaccinating party composed of one doctor as chief, and 20 Insular vaccinators was assigned to this province to help the provincial sanitary personnel in checking the smallpox epidemic.

The Antituberculosis Society employed a duly registered nurse to visit from house to house, giving sanitary instructions to tuberculosis patients to follow, as well as to their families so as to avoid the spread of the disease.

Twenty-three lepers were collected during the year against 5 collected during the past year. Of this number 14 were sent to the Culion Leper Colony and 9 escaped from the detention house due to the negligence of the guardians.

VACCINATION.

Besides the vaccinations performed by the vaccinating party, the sanitary personnel of the province performed 275,729 vaccinations which is more than the total population of the entire province. If to this number of persons vaccinated is added the number of persons vaccinated by the vaccinating party, it gives a total number of persons vaccinated far in excess of the population given the province by the last census, which means that many persons were vaccinated more than one time; and this fact also shows that practically all the population of the province has been immunized against smallpox.

MEDICAL RELIEF.

No new dispensaries were established during the year. Public dispensaries are located in the municipalities where presidents of sanitary divisions reside. Free medical attendance and medicines are furnished to indigent persons by said dispensaries.

Last year there were two woman's clubs established, while this year there are seven clubs in all, but practically no work has been done by them toward the infant mortality problem. Also the district nurses have not accomplished any work in the infant mortality problem because most of their time was devoted to attending patients in the emergency hospitals.

MEDICAL INSPECTION OF SCHOOL.

Very few public schools were inspected during the year due to epidemic campaign work, but those inspected were found in good sanitary condition. Pupils found suffering from any affliction were treated at the dispensary or at home

WATER SUPPLIES.

Except Vigan, the capital of the province, the municipalities of this province do not have safe water supplies. Only surface unprotected wells and river water are used for drinking and domestic purposes.

Vigan has an excellent modern water supply system, whose source comes from a selected spring at a distance of 12 kilometers from the city, conducted by means of pipe to a concrete cement tank located two kilometers from the city, and from which safely deposit the water is distributed to the population.

DISPOSAL OF EXCRETA.

Vigan, the capital, is the only municipality which has a few modern systems of toilets. The rest of the municipalities have none. Several times the municipal councils have suggested the enforcement of sanitary disposal of excreta by means of the Antipolo system, but up to the present no action has been taken by them. The high cost of living and the high cost of material are the excuses submitted, but as has been said many times the cost of an Antipolo closet is only about ₱15.

MISCELLANEOUS.

Three new municipalities were created during the year, but due to lack of funds no sanitary inspectors could be detailed to them.

Clean-up week was carried out with success and the first prize for cleanliness was obtained by the municipality of San Esteban and the second prize by the municipality of Santa Catalina.

The provincial laboratory established in 1917 only did routinary work during the year.

The majority of the markets in this province are constructed of light material but are maintained in a good sanitary condition.

The public markets of Santo Domingo, Cabugao and Candon are constructed of strong material (concrete) and they are of modern style in accordance with sanitary plans.

FIFTH HEALTH DISTRICT,
PROVINCE OF ABRA.

(Surgeon JUAN S. FERNANDO, M. D., *District Health Officer.*)

ORGANIZATION.

The province of Abra was separated from the fourth health district and made an independent health district, effective March 1, 1919. To this new district No. 5 was assigned as ordinal number, and was organized into two sanitary divisions consisting of four municipalities each, effective April 26, by virtue of an Executive Order. Some townships of this province were organized as municipalities and some were included in the health organization, increasing the number of municipalities from seven to ten embraced in this new health district.

Means of transportation between municipalities are fairly satisfactory during the dry season, but during the rainy season, the province becomes isolated from the others, and each municipality from the rest of the province, rendering it almost impossible to take sanitary measures and to obtain the necessary information.

FINANCIAL STATEMENT.

At the beginning of the year ₱3,130.36 remained as balance in the health fund of the province. Two thousand five hundred ninety-one pesos and ninety-two centavos was appropriated by the municipalities, which, with ₱1,000 contributed by the province, made a total of ₱3,591.92 appropriated for sanitary purposes excluding the balance of 1919. The population of this health district being 71,721, according to the last census, the contribution to the health fund for the year 1919 was ₱0.05 per capita.

It is evident that very few sanitary improvements could be accomplished with such meager funds, a fact that also accounts for the lack of sanitary personnel.

VITAL STATISTICS.

The death rate has remained stationary for the last four years. The increase in 1918 was due to the influenza epidemic. The same may be said with reference to births and marriages, because, although the birth rate in the year 1919 is lower than in 1918, it may be due to the reason that perhaps not all births which occurred in the last quarter of 1919 were yet registered at the time of submitting the report.

The infant mortality rate is increasing every year, convulsion of infants, diarrhoea and enteritis and congenital debility being the three causes to which is attributed the increase of mortality in infants under one year of age, but as of these three causes only one (diarrhoea and enteritis) may be accepted as proper for the decrease of infant mortality in this health district, the others are due to the same cause as was stated in the Annual Reports of this Service of the preceding years and on pages 146 to 151 of this report.

Malaria is decreasing due to the intensification in the distribution of quinine among the inhabitants of the health district.

The non-prevalence of beriberi in this district is due to the fact that home gardens are found at almost every house and therefore fresh vegetables are consumed in abundance, making the daily diet of the people rich in vitamins.

COMMUNICABLE DISEASES.

Dysentery is registered every year with more or less epidemic character, especially during the third quarter, which is due to not having proper disposal of refuse, manure and excreta in the municipalities. In spite of the absence of better facilities as well as lack of trained personnel, these epidemics have been controlled, treating the cases in the homes and distributing among the families disinfectants and instructions as to their uses.

Typhoid fever occurred also in the same period as dysentery. It is probable, however, that there being no physicians, many deaths from dysentery were diagnosed by municipal secretaries as typhoid fever.

Tuberculosis is still prevalent in this health district, and this should be attributed to the same cause already reported in previous Annual Reports, which still remain difficult of correction on account of lack of appropriations to institute an efficient campaign against said disease.

Influenza invaded the district in the latter part of 1918 and was present up to the month of May, 1919. It was rather severe in January causing 95 deaths.

Leprosy.—The collection of lepers in the district is very difficult, there being no regular detention house and it being an inland province. Lepers collected are sent to Vigan, Ilocos Sur, for transfer to Culion. The number of lepers collected is stated in Table K of this report.

VACCINATION.

Thorough vaccination work has been performed throughout the entire district. The total vaccination and results obtained are tabulated in Table L. The percentage of positives is estimated at 58.4, most of which was noted amongst children under one year of age and under the ten-year age group.

Vaccination among the Tinguians was rather difficult, their present culture being such as to render them unable to realize the benefits of vaccination.

MEDICAL RELIEF.

There were eight public dispensaries in operation attended by sanitary inspectors, under the supervision of the presidents of sanitary divisions, where consultations, treatment and minor surgical operations were performed free of charge. Table N shows the number of patients treated in these dispensaries.

There are 15 women's clubs in the district directing their attention not only to infant welfare work and the care of pregnant women, but also to the campaign for increased food production. These clubs lack technical personnel, such as physicians and nurses, and therefore their work is necessarily handicapped. There is a vacant position for female nurse for infant welfare work, but no one could be secured on a salary of fifty pesos per month, which is the amount offered for said position.

MEDICAL INSPECTION OF SCHOOLS.

The number of schools and pupils inspected is tabulated in Tables R and S. The sanitary disposal of excreta in the public schools is improving but the conditions of ventilation and light remain deficient, and overcrowding is often found.

WATER SUPPLY.

No satisfactory water supply exists in the entire Province of Abra. Bangued will soon have a water system. For lack of revenues, no artesian or sanitary wells could be drilled or dug in the other municipalities. The common practice of securing drinking water is by digging surface wells near a river bank. The water enters the well by filtration.

DISPOSAL OF EXCRETA.

A draft of a municipal ordinance providing for the establishment of the so-called Antipolo system for the disposal of excreta was sent to all municipal councils, but not a single town of this health district passed said ordinance. The high cost of materials is the chief cause alleged why said ordinances could not be approved, which is inadmissible, the estimated cost of an Antipolo closet being fixed at only from 10 to 25.00 pesos.

CEMETERIES.

Nine new cemeteries were opened during the year, but a few municipalities remain as yet without cemeteries.

The dead bodies are buried either in the neighboring towns or barrios. It is customary among the non-Christian Tinguian tribes to bury their dead under their houses.

MISCELLANEOUS.

Forty-five sanitary orders were issued and 37 persons prosecuted for infraction of sanitary ordinances, but only seven were fined. It is not pleasant to state that the local authorities give very little support in the enforcement of sanitary laws and ordinances.

A baby contest was held under the auspices of the Bangued Women's Club in connection with the work of infant welfare.

The clean-up week was carried out with great success.

The provincial governor was appointed chairman with the division superintendent of schools and the district health officer as members. The schools did a great deal to promote clean-up week work, and the committee decided to give a ₱100 prize to the different schools of Bangued.

SIXTH HEALTH DISTRICT, LA UNION PROVINCE.

(Surgeon GUILLERMO ZANDUETA, M. D., *District Health Officer.*)

No changes have been made in the health organization of this health district.

One district nurse was appointed about the middle of the year and temporary assistant sanitary inspectors in connection with cholera and smallpox epidemics.

The telephone and telegraph are used in this province as a means for conveying information on sanitary matters.

FINANCIAL STATEMENT.

The municipalities of this province appropriated during the year the sum of ₱7,708.50 as contribution to the health fund of the province. The province appropriated an equal sum, making a total of ₱15,417 for sanitary purposes. The per capita contribution is ₱0.09, if it is considered that 160,575 is the total population of this health district in accordance with the official census for 1918.

VITAL STATISTICS.

Ever since 1916 and in spite of the influenza epidemic in 1918 and cholera, dysentery, and smallpox in 1919 the birth rate has been higher than the death rate thus showing a continuous increase in population.

The infant mortality rate was also lower in 1919 than in 1918, but it was higher than that registered in 1916 and 1917.

The birth and marriage rates remain practically the same with very little variation.

Beriberi in infants was not reported in previous years, but in view of the fact that the deaths registered by convulsions in the present year plus deaths attributed to beriberi in infants, are approximately equal to the number of deaths registered by convulsions in the previous years, it may be deduced from these figures that the deaths from beriberi in infants were included under the diagnosis of convulsions in the years 1916 and 1917 and 1918.

Malaria prevailed with a high percentage of mortality, which shows that no efficient campaign has yet been undertaken against this disease.

COMMUNICABLE DISEASES.

Smallpox.—The infection began in January and probably proceeded from Pangasinan. Four hundred twenty cases with 125 deaths were registered, which gave a morbidity rate of 278 per 100,000 population and a fatality rate of 29.0 per cent.

Only routinary measures were taken to control the disease and in the month of December 11 cases and two deaths were registered.

Cholera.—The first case of cholera was registered in Rosario in the month of June and proceeded from Pangasinan. In the month of November the outbreak was definitely under control. The morbidity rate was 924 per 100,000 and the fatality rate among the hospitalized was 57 per cent while among non-hospitalized it was 74.6 per cent.

Four emergency hospitals were established, one in each of the municipalities most severely infected. In these hospitals 70 cases were treated. By the establishment of these hospitals the outbreak of cholera was rapidly controlled.

Dysentery.—This disease appeared with sporadic cases in March, and in July assumed an epidemic character. The last cases registered were in November. The morbidity rate was 582 per 100,000 with a fatality rate of 56 per cent. No sanitary measures were taken for the control of this epidemic which ceased spontaneously.

Influenza.—Influenza continued in this province from January to March, inclusive, during which time it lost its epidemic character.

Rabies.—Six persons were bitten by suspected rabid dogs of whom four received antirabic treatment.

VACCINATION.

There were performed 153,604 vaccinations during the year by the provincial and municipal personnel, including the temporary vaccinators appointed, which number constitutes more than the entire population of the province. As 63 per cent of the vaccinations resulted positive, which percentage added to the percentage of positives obtained the previous year, permits the deduction that all the inhabitants of this health district are immunized against smallpox, excepting the newly born that have not yet been vaccinated.

MEDICAL RELIEF.

No new dispensaries were opened during the year. For the first time there were established emergency hospitals in this province. At the beginning considerable difficulty was encountered in hospitalizing the patients due to the fact that the people thought that the patients would be badly treated in the hospitals. But this opposition lasted only a short time and towards the last the people had become reconciled with it and readily consented to hospitalization due to the fact that they had seen its benefits.

There were six new women's clubs organized during the year, but no work was done towards the reduction of infant mortality. One baby contest was celebrated in Agoó.

The district nurse was unable to accomplish much toward the reduction of infant mortality due to the fact that her services were required for attending the patients in the emergency hospital established in San Fernando, the capital of the province.

MEDICAL INSPECTION OF SCHOOLS.

The condition found at the schools in regard to yards, ventilation, sanitation etc., were satisfactory, as well as the disposal of excreta, because there were found in use 50 septic tanks, 11 Antipolo, and 25 pail systems.

WATER SUPPLIES.

Unsafe surface wells and river water are the most common sources of water supplies used by the people of this health district, with the exception of the municipality of Santo Tomas which has an excellent artesian well and San Fernando which is supplied with spring water conducted to the town by means of galvanized iron pipe.

Drilling of artesian wells was tried in every municipality but with unsuccessful results, the artesian well at Santo Tomas being an exception.

DISPOSAL OF EXCRETA.

Efforts were made towards the construction of Antipolo systems for sanitary disposal of excreta, but owing to the high cost of materials to be used, only 25 such systems were built in private houses and 7 in public schools.

MISCELLANEOUS.

Only one slaughterhouse, without water supply, was built during the year.

In connection with the celebration of school gardens, lectures regarding health matters were given by the presidents of sanitary divisions.

Clean-up week was carried out with success.

SEVENTH HEALTH DISTRICT,
PROVINCE OF CAGAYAN.

(Dr. JOSE P. QUINTO, *Acting District Health Officer.*)

ORGANIZATION.

Medical Inspector Francisco Lopez Lubelza was in charge of this health district up to June 14th 1919, upon which date he was relieved by Dr. Quinto.

No changes have been made in the health organization of this district. Two district nurses were appointed for infant welfare work, and the number of sanitary inspectors was increased from 25 to 26. Besides these, 19 more temporary sanitary inspectors were appointed to work in connection with the smallpox campaign, who remained employed in the service as circumstances required.

The transportation facilities in this health district are poor. Reports of communicable diseases are transmitted by telegraph, but such means of communication are not available in all municipalities.

FINANCIAL STATEMENT.

As a rule municipalities make allotments to the health fund at the minimum percentage allowed by law.

Ten thousand three hundred eighty-eight pesos and sixty-one centavos was appropriated by the municipalities. An equal sum was appropriated by the province, making a total of ₱20,777.22, or ₱0.11 per capita, the population of this health district being 199,938, according to the last census.

VITAL STATISTICS.

No notable changes are noted in the births, marriages and total deaths of infant mortality in this health district. Probably the lower rate of total mortality as well as infant mortality in the year 1916 as compared with the following years is due to the fact that not all deaths which occurred were registered because of the lack of preparation of the sanitary personnel in said year to compile the records.

The mortality from most common causes remains also the same with less variation than that of the past years. It is true that the number of deaths from convulsions in infants and congenital debility has suffered a little increase in 1919, but the population of this year is larger than that of the previous year and therefore the rate remains practically the same. It is also an indubitable fact that many cases of death diagnosed as beriberi in adults are sequels of the influenza registered in the year 1918.

Malaria remains with a high rate of mortality in this province which is due to lack of sanitary personnel in this health organization to establish public dispensaries in barrios where not only quinine could be extensively furnished free to patients, but also a scientific campaign for the eradication of breeding places of mosquitoes could be undertaken.

COMMUNICABLE DISEASES.

Tuberculosis.—Tuberculosis has caused more deaths than the other communicable diseases that have been registered as epidemics during the year.

The reasons mentioned in other pages of this report with reference to the prevalence of this disease in other health districts may be applied to this health district.

Smallpox.—Smallpox existed in this health district and was probably carried by the numerous merchants who are engaged in traffic between the Province of Ilocos Norte and Aparri, the principal seaport of Cagayan.

The morbidity rate of this disease was not so high but the mortality among cases not hospitalized was very high.

Three emergency hospitals were established for the treatment of patients, and of the 115 hospitalized cases only 11 died which made 19 per cent fatality.

Cholera.—Cholera appeared in this health district in the month of September continuing at the end of the present year. Its morbidity was lower than the morbidity of smallpox.

The port of entrance of the disease was Aparri and from this town it was extended to the others. Only one municipality was free from the infection, probably due to its geographical situation.

Dysentery.—Cases of dysentery have been reported since 1916 due to unsafe water supply. There is not a single artesian well and only insanitary surface wells and rivers are available as sources of water supply in the province.

The number of cases of dysentery registered in the present year is less than that in the previous years and the same may be said with regard to its fatality.

Influenza.—The prevalence of influenza was a continuation of the epidemic of 1918 and was considered extinguished in March.

Rabies.—Only one person was bitten by a rabid dog and died due to the fact that the Pasteur treatment requested did not arrive in time.

Leprosy.—Thirty-four lepers were captured and taken by the boat assigned to collect lepers to be sent to Culion Leper Colony.

No special sanitary measures but the routine ones were adopted to suppress epidemics.

In Aparri and Enrile were established emergency hospitals not only to give more efficient treatment but to isolate cases. In those municipalities having no available funds for this purpose, isolation houses were established in which patients were placed under isolation and quarantine and attended by a physician and one nurse.

Free distribution of sulphuric acid lemonade was made extensively among the inhabitants of all municipalities infected, principally among contacts of cases. With this measure good results were obtained in the treatment of carriers or suspected carriers.

VACCINATIONS.

The whole population of this health district was vaccinated during the year. A vaccinating party composed of twenty Insular vaccinators and a doctor as chief was assigned to this health district whose only duty was to make a systematic vaccination of all the inhabitants of the province. More than three-fourths of the total vaccinations were performed by this party.

MEDICAL RELIEF.

No new dispensaries were opened during the year and very little work was done by the already existing ones. In the majority of cases only accidents, wounds and skin diseases were treated in the public dispensaries.

The emergency hospitals established in Aparri and Enrile contributed very much to the prompt eradication of epidemics and no opposition on the part of the people was encountered in the enforcement of hospitalization.

Sixteen more women's clubs were newly organized during the year by an agent of the Bureau of Agriculture sent to this province for that purpose.

Principally the work performed by these woman's clubs was toward increasing food production and also to organize baby contests in some municipalities which gave good results, especially in Tuguegarao.

During the first quarter a district nurse was detailed to several municipalities giving public and private lectures with regard to the care of infants, but due to the establishment of emergency hospitals this provincial nurse was called to attend to the cases hospitalized.

MEDICAL INSPECTION OF SCHOOLS.

Public schools inspected were found to be in good sanitary condition, except those established in barrios. The disposal of excreta most frequently found is the so-called pit system which is not satisfactory from a sanitary standpoint.

WATER SUPPLY.

No artesian wells have been drilled in the province, because every attempt in this matter was a failure due to the geological formation of the earth. Several sanitary surface wells have been dug using a hand pump to draw the water. Rain water and rivers are the most common water supply used by the inhabitants of this health district.

DISPOSAL OF EXCRETA.

The pit system is the most extensive method used for the disposal of excreta in this health district.

The municipal councils of Tuguegarao and Aparri have already passed an ordinance enforcing the establishment of the Antipolo system, some of which have already been installed in these two municipalities. A complete toilet of the Antipolo type may be constructed at a cost of ₱20 to ₱25.

MISCELLANEOUS.

This health district has a small laboratory in which routinary examinations may be performed, but its aid in the detection of cases of cholera was very limited due to lack of technical personnel and facilities in said laboratory.

EIGHTH HEALTH DISTRICT,
ISABELA PROVINCE.

(Senior Surgeon FRANCISCO ONTAÑON, M. D., *District Health Officer*).

ORGANIZATION.

No changes in the health organization in this health district have been made during the year.

The regular sanitary personal of this province was increased on account of the smallpox and cholera epidemics by adding six temporary sanitary inspectors who worked until the end of the year, and by adding forty more temporary sanitary inspectors for a period of two months to work in the campaigns undertaken for the eradication of the two mentioned epidemics.

Only five of the 13 municipalities of this province have telegraphic facilities for transmission of information on sanitary matters, the remaining 8 municipalities, having no telegraph stations, rely entirely on messengers to dispatch their reports to the office of the district health officer. The principal means of transportation in this province is water transportation and saddle horses.

FINANCIAL STATEMENT.

Five thousand eight hundred eighty-nine pesos and twenty-one centavos is the sum contributed by the municipalities to the health funds of this health district and as the province contributed an equal amount, the sum of ₱11,778.42 was the total amount of the health fund of the province in the year 1919 for sanitary purposes.

The population of this health district, according to the official census for 1918 is 109,082, exclusive of the non-Christian population. Therefore ₱0.11 is the per capita contribution of the province in the year 1919 to the health fund of this province.

VITAL STATISTICS.

Deaths exceeded births in 1918 due to the influenza epidemic, but in the year 1919 the rates of births, deaths, and marriages were approximately normal in this province.

The infant mortality rate remained too high due to the smallpox epidemic registered, although less than that of 1918.

No data has been reported with regard to beriberi in adults and in infants for the past years and therefore no comparison can be established with the number of deaths reported during the present year, but it is not doubted that deaths occurred by said disease in the past years.

Malaria remained at the same rate as in the previous years.

COMMUNICABLE DISEASES.

Dysentery.—Dysentery, which was prevalent in the previous years, registered only sporadic cases in the present year, with a total of 36 deaths.

Smallpox.—Smallpox appeared in the province in February, and it is supposed that the infection proceeded from Ilocos Norte. The last cases were registered in August, making a total of 211 cases with 126 deaths, or a morbidity of 265 per 100,000 population and a fatality of 59 per cent.

Twenty-one emergency hospitals and isolation houses were established in this province in which 193 cases were attended, with 108 deaths, or a fatality rate of 56.02 per cent. The fatality rate among non-hospitalized patients was 100 per cent.

Cholera.—Cholera appeared in the month of October and proceeded from Cagayan Province. At the end of the year cases remained in only one municipality (Ilagan). The morbidity rate was 321 per 100,000 population, with 51 per cent of fatality. Five emergency hospitals were established in which 141 cases were attended with 51 deaths, or 36 per cent mortality.

Influenza.—Influenza was present during the months of January and February, registering 1,373 cases with 263 deaths.

Tuberculosis.—Tuberculosis remained at the same rate as in the previous year.

The establishment of emergency hospitals and isolation houses have been the most efficient measures taken towards the eradication of smallpox and cholera epidemics.

Besides this, routinary sanitary measures were also taken.

Rabies.—Four persons died from rabies, of whom only one received the antirabic treatment. No reason is given by the district health officer with regard to the failure to apply the Pasteur treatment to the others, but same probably was due to the fact that the office of the district health officer was not notified of the cases.

Leprosy.—Only two lepers were captured and sent to the Culion Leper Colony during the year.

VACCINATION.

One hundred sixty-nine thousand and nine hundred units of vaccine virus were sent to this health district, but only 82,237 vaccination were performed.

A vaccinating party, composed of 20 vaccinators and a doctor as chief, was assigned to this province to perform a systematic vaccination, which party worked in coöperation with the sanitary personnel of the province.

MEDICAL RELIEF.

No new public dispensaries were opened during the year and the work done by the existing dispensaries was very poor due to the fact that the sanitary personnel devoted their work to the checking of epidemics.

No work has been done during the year towards the problem of infant mortality.

MEDICAL INSPECTION OF SCHOOLS.

Very little time has been devoted to this matter. Only 14 of the 87 public schools were inspected. The schools inspected were found in a good sanitary condition, but without any kind of system for disposal of excreta.

Scabies, tonsils, and dental caries were the diseases predominating among the pupils.

WATER SUPPLY.

There is only one artesian well in this province and was drilled in the municipality of Cauayan some years ago, but furnishes very little water. Approximately 2,000 persons use this source of water and the rest of the population use river water for all their necessities.

DISPOSAL OF EXCRETA.

Two thousand fourteen pit systems for the disposal of excreta were established which was due to the **personal efforts of the sanitary personnel** of the province and not because of having been enforced by any municipal ordinance. This system is not a satisfactory one, but could be admitted as a transitory method.

NINTH HEALTH DISTRICT,
NUEVA VIZCAYA PROVINCE.

(Medical Inspector VICTORINO N. SANTOS, M. D., *District Health Officer.*)

This province is one of the so-called special, or Special political organizations, not only because its population is composed of Christian and non-Christian peoples but also because its resources are very poor and therefore its health organization is supported with Insular aid.

The number of nurses were increased during the year from two to three and the sanitary inspectors from seven to ten.

FINANCIAL STATEMENT.

This province received in the present year the sum of ₱13,108 from the Insular Government as aid for the maintenance of the sanitary organization and provincial hospital which was the only money available during the year for such purposes.

VITAL STATISTICS.

The population of this health district is increasing every year rather by the immigration proceeding from the neighboring provinces than by natural increase.

It would seem to be certain that at the date of closing this report not all births registered in the province during the year were reported. This supposition is deduced from a comparison of births, in the year 1919 with the previous years. Due to this fact, it is shown in table "C" that the number of deaths reported is almost double that of births.

The infant mortality rate was reduced during the present year, if compared with that registered in 1918 and increased if compared with that registered in 1917, but always shows a high percentage.

Malaria and convulsions are the causes to which are attributed the majority of deaths by the most common diagnoses used. These causes give 26 per cent of the total mortality which owing to the local health condition of this province cannot be admitted as the high mortality from these causes. This fact is undoubtedly due to erroneous diagnosis.

Only 10 per cent of the total deaths were due to communicable diseases, tuberculosis occupying the first place with 54 deaths, smallpox the second with 40 deaths, and dysentery the third, with 21 deaths.

Smallpox and dysentery appeared in this district only from time to time as small outbreaks, and most frequently in travelers coming from other provinces, but never in epidemic form.

VACCINATIONS.

A complete vaccination and revaccination of all the inhabitants of this health district were carried out during the year.

Some difficulties were encountered in performing vaccination work among the Ilongot people, but were easily and amicably settled.

MEDICAL RELIEF.

A public dispensary was opened in connection with the provincial hospital in Bayombong.

The report of the provincial hospital is inserted on another page of this report.

Frequent public lectures on diseases and their prevention were given and house-to-house visits made by the district nurse, instructing mothers

in the care of children and with regard to the decrease of infant mortality. Although there are already organized 4 women's clubs in this province, no work was done in regard to the reduction of infant mortality.

MEDICAL INSPECTION OF SCHOOLS.

All schools, except one, were inspected during the year and the sanitary condition found was very satisfactory. In Bayombong, the capital of the province, there was assigned one day in each month for clean-up work and inspection of schools. On that day everything in the school was cleaned up and the rooms inspected by an Officer of the Government who gave prizes to the pupils whose room was the cleanest and most presentable.

The only criticisms that may be offered in regard to the schools in this province, is that the schools are not provided with sanitary closets.

WATER SUPPLIES.

There are about 9 good wells in operation in this province the water from which is drawn by pumps, but most of the people obtain their water from springs and surface wells which do not furnish safe water.

DISPOSAL OF EXCRETA.

No ordinances were passed with reference to the adoption of sanitary systems for disposal of excreta. The people use the soil in any place for toilet purposes and only very few private homes have a covered pit system.

MISCELLANEOUS.

Clean-up week was one of the most succesful clean-up weeks celebrated in this province, according to the statement of the district health officer.

In connection with the exposition celebrated in the province there was organized a baby contest, but which had to be cancelled due to bad weather as the mothers did not want to expose their children to the cold and rain.

TENTH HEALTH DISTRICT, PANGASINAN PROVINCE.

(Senior Medical Inspector FRANCISCO LOPEZ LUBELZA, M. D., *District Health Officer*).

ORGANIZATION.

The Province of Pangasinan has been organized into sanitary divisions since the beginning of 1918 and no changes have been made in 1919.

Some of the difficulties that were met in the establishment of an effective health control in the province (according to the statement of the district health officer) are: (a) Lack of means of communication and transportation during the rainy season, especially in the western part of the province; (b) intervention instead of coöperation in many instances of local politics in purely health matters, and (c) lack of technical and trained men who would accept positions in the Service.

In regard to methods employed during the year for securing information in public matters, vital statistics, communicable diseases, calls, etc., the telephone was used and this service was extended to the western part of the province. The office of the district health officer is furnished with an automobile for its exclusive use.

FINANCIAL STATEMENT.

The municipalities of this province, contributed the sum ₱38,085.53 to the health fund from their general fund while the province only contributed ₱18,000, or less than half of the total amount allotted by the municipalities.

This made a rate per capita of ₱0.10, if it is considered that 567,644 is the population of this province, in accordance with the last official census for 1918.

The balance of about ₱8,000 that appears in Table B from 1918 is rather an error of the provincial bookkeeper, because the bills for medicines and supplies used during 1918 and amounting almost to said balance were charged to the year 1919 because they were not received on time.

The health organization of the province has incurred an overdraft of several thousand pesos in spite of the Insular aid of ₱5,000 thru the provincial government and several thousands from the Central Office. Said overdraft was exclusively used for the cholera campaign, and this unexpected overdraft has not only affected the plans for 1919 but also those for 1920.

The municipalities of Urdaneta and Pozorrubio applied for loans for the construction of sanitary markets and the buildings were finished during the year.

VITAL STATISTICS.

The population of this health district was estimated and the rates computed since 1917 on the result of the census for 1903, so said data is far less than the population given in the official census for 1918.

The population of this health district during the present year has decreased by about 5,000 on account of the high excess of mortality over births due exclusively to cholera and smallpox epidemics.

The epidemic of smallpox and the impairment of infant welfare activities during the year have greatly contributed to the high infant mortality.

The decrease of births and marriages was due to the decrease of population since 1918.

The most striking feature noted in Table U referring to the most common diagnosis used, in spite of the decrease of the population, is the increased number of deaths from malaria. The district health officer attributes this fact to the high price of quinine, increasing number of mosquito breeding places due to continued construction of artesian wells without proper drainage and surface wells not covered.

Also deaths diagnosed as acute bronchitis were greater in number than in the previous year. No explanation is given of this fact, but probably same is due to cases of smallpox or cholera concealed by such diagnoses.

COMMUNICABLE DISEASES.

The communicable diseases that caused the most deaths during the year are cholera, smallpox, dysentery and tuberculosis. The first two appeared in real epidemic form while dysentery was rather sporadic, though it has also caused great mortality.

Cholera.—Cholera, which appeared last year, was controlled in the month of January of the present year. It reappeared in the month of June, but due to the fact that the district health officer of this health district took charge of his position on July and not being familiarized

with the local conditions of the province he could not take efficient measures and the epidemic acquired great development which resulted that in July forty municipalities of the forty-six of the province were infected.

The Central Office immediately sent equipment, materials and personnel to establish four emergency hospitals in the center of the most severely infected territories, as well as personnel to perform house-to-house inspection for the detection of cases and disinfection, especially of surface wells. With these reinforcement and with more than 80 temporary sanitary inspectors appointed by the municipalities, besides the regular personnel of the province, the epidemic could be considered as controlled in the month of September. This was the first time in the history of this Bureau that an epidemic so extensive was controlled in three months.

Also the promulgation of special rules which superseded the municipal ordinances by which drastic and energetic action was taken, contributed in a great measure to the eradication of the epidemic.

The organization of the campaign was made by the Chief of the Division of Sanitation in the Provinces and the direction was put under the authority of Senior Medical Inspector Gabriel Intengan, one of the most efficient officers in the Service.

This was the first epidemic in this province in which emergency hospitals were established and the result—as stated by the district health officer—“has been encouraging, though still it is not considered an ideal measure to be followed always, having in mind the numerous cholera carriers that are producing frequent sporadic cases everywhere and the expenses of said sanitary measures.”

The health organization of this province secured, during the epidemic, special aid and support from the Central Office and from the provincial board. The Philippine Constabulary also rendered unconditional coöperation during the campaign. Large quantities of sulphuric acid solution were distributed among the people as a prophylactic measure against cholera carriers.

Smallpox.—This disease has greatly increased infant mortality in 1919 due exclusively, according to the statement of the district health officer, to defective organization of vaccination in previous years.

The epidemic of this year was the continuation of that of 1918 and by means of an extensive and intensive vaccination it was controlled in the month of October.

Dysentery followed the same epidemic course as cholera and it could be established that more than 60 per cent of the deaths reported as dysentery were real cases of cholera not detected by the health authorities and hidden by the people.

Rabies.—In view of the fact that these were urgent times during the year and the number of persons bitten by rabid dogs having been less than in previous years, very little attention was paid to poisoning and muzzling of dogs. Nearly all persons bitten by dogs that came to notice on time received the Pasteur treatment and none of them developed the disease.

Leprosy.—Efforts were made towards accomplishing the segregation of lepers scattered throughout this health district, but only eight were captured and one recaptured and all sent to San Lazaro Hospital in Manila.

VACCINATION.

Table K shows the number of vaccinations performed in this health district during the year.

The percentage of positives among the group ages from 0 to 10 years cannot be given exactly, but it is estimated that about 80 per cent were never vaccinated.

MEDICAL RELIEF.

Due to the high prices of drugs and to the epidemics there were some difficulties in establishing and supporting free dispensaries. For this reason eleven dispensaries were closed.

Owing also to the anti-epidemic work the attendance in public dispensaries was stopped during the epidemic and therefore the patients attended were less than those in the past year.

The same statement may be made with regard to infant welfare work. But soon after the smallpox epidemic, six baby contests were held in some of the municipalities by the respective woman's clubs with many valuable prizes to stimulate motherhood and the care of infants. On these occasions instruction written in vernacular language about prenatal and infant care were distributed to mothers and relatives of the contestants.

Practical instructions were for sometime given by the infant welfare inspectresses to pregnant women and rural midwives pertaining to care during puerperium and to care of infants, besides the conference given by the presidents of sanitary divisions on special occasions regarding the same matter.

The work done by the district nurses was decreased if compared with that of the past year due to the fact that they served in the smallpox and cholera campaigns and emergency hospitals established.

INSPECTION OF SCHOOLS.

The sanitary condition found in different schools inspected was excellent, with the exception of the disposal of excreta, which in the majority of cases was unsatisfactory.

Scabies and dental caries were the most common affections found among pupils which were treated in the dispensary.

WATER SUPPLY.

The question of water supply in this province, considering its population, is still far from being solved no matter what the number of artesian wells so far drilled may be.

In the municipalities in the western and in some in the eastern part of the province the perforation of artesian wells has always been a complete failure, because the water does not flow and cannot even be drawn by a pump.

DISPOSAL OF EXCRETA.

The majority of the municipal councils have approved the ordinance regulating the disposal of excreta, but the corresponding municipal executive officers do not seem to enforce the ordinance strictly.

The big flood in the last rainy season spoiled nearly all the closets of the Antipolo system, but 3,199 new ones were built during the year. The cost of one is estimated at ₱10.

MISCELLANEOUS.

The bacteriologist of this health district was detailed for sometime to field work during the epidemic and for this reason laboratory work has been less than that of the previous years.

The sanitary condition of markets toward the protection of foodstuff from contamination was improved; fly and dust proof containers and covers were required.

During the provincial exposition last February exhibitions were made by all available means toward promotion of the sanitary condition and prevention of diseases.

The Bureau of Education played the most important part in the success of clean-up week.

ELEVENTH HEALTH DISTRICT,
PROVINCE OF ZAMBALES.

(Assistant Surgeon ISMAEL VILLARICA, M. D., *District Health Officer.*)

ORGANIZATION.

The status of the health organization of this province is the same as in 1918 and no changes or improvements have been made during the year.

FINANCIAL STATEMENT.

Eight thousands pesos is the amount appropriated by both the municipalities and the province as contribution to the health fund of this health district, the sum appropriated by the province being equal to the total sum appropriated by the municipalities.

The per capita contribution is ₱0.09, considering that the last official census for 1918 assigned to this province a population of 83,620.

The total expenditures for the year were ₱10,539.17, making a deficit of ₱2,527.92.

VITAL STATISTICS.

The number of total deaths and deaths under one year of age were less than those of the past year, but higher than those of 1917 due to the epidemics of dysentery and cholera.

Also the number of deaths attributed to congenital debility, beriberi (both adults and infants), and diarrhoea and enteritis is greater than the number registered by the same causes in 1917.

The prevalence of beriberi in this health district is explained by the district health officer as a consequence of the poverty of the inhabitants which does not permit them to take a balanced diet. They most commonly use decorticated rice and salted dry fish as their daily food.

The prevalence of beriberi in infants is due to the prevalence of the same disease in their mothers.

COMMUNICABLE DISEASES.

Thirty-six and eighty-four hundredths per cent of the total deaths reported pertain to communicable diseases. Those which appeared with epidemic character were dysentery and probably also cholera and typhoid fever. Tuberculosis remains at the same rate as that of the previous year.

Dysentery.—Cases of dysentery were reported during the whole year, especially in the municipality of Botolan, but same assumed an epidemic character from May to October.

Its spread was caused (according to the statement of the district health officer) by the fact that the people did not believe in the contagious character of this disease.

The high rate of fatality registered is due to the fact that almost all the cases became known only by the requirements of death certificates previous to the burial of the dead body.

Smallpox.—Smallpox was registered in the southern towns of the province, especially in San Antonio, to which pertain 20 of the 33 cases registered.

Cholera.—In some of the southern towns several cases of cholera were reported, 39 in all, of which 23 occurred in the municipality of San Marcelino. But the district health officer states that after a careful investigation it was found that the majority of cases were not real cholera. They were poisoning caused by eating raw fish called *dilis*.

Influenza.—In the municipality of San Marcelino 20 cases and 20 deaths from influenza were reported and 18 in Santa Cruz, but as these cases were registered in the months of November and December, eight months after the eradication of the influenza epidemic in the year 1918 and the fatality rate is 100 per cent. it is presumed that these deaths attributed to influenza were really due to other causes not stated.

Rabies.—There were registered two cases of rabies. Antirabic serum was applied to both, but one died.

Leprosy.—The lepers captured came from families from which other cases had been registered previously.

VACCINATION.

Vaccination was carried out very well. The people understand at present the benefit of vaccination and they themselves voluntarily go to meet the vaccinators to be vaccinated and therefore no difficulties or obstacles were encountered by the vaccinators in the performance of their duties.

MEDICAL RELIEF.

In every municipality there is established a public dispensary attended by the president of sanitary division, but no new ones have been opened during the year.

One more women's club was organized during the year in the municipality of Botolan.

The three women's clubs at present in operation were organized with a view to undertake a campaign against the high infant mortality but little or no work has been done due to lack of funds.

The deaths caused by puerperal state remain at the same rate and no work has been accomplished due to the fact that the service of a nurse cannot be obtained.

INSPECTION OF SCHOOLS.

Almost all the public schools in the province were inspected. They were found in good sanitary condition, located in sanitary places and most of them have a system for sanitary disposal of excreta.

The most common diseases found among pupils were dental caries and skin diseases.

WATER SUPPLIES.

This province is the most poorly provided with sanitary water supplies. For a population of 84,000 souls there are only 4 artesian wells. The water supplies used by the people which furnish unsafe water are surface wells and rivers.

The municipality of Subic and the Naval Reservation of Olongapo have water systems, the water being taken from springs and conducted to the towns through pipe.

DISPOSAL OF EXCRETA.

The disposal of excreta in this health district is in the same condition as that of the water supply.

Only three closets of the Antipolo system were established during the year in private houses and 39 in public buildings, most of them in public schools.

MISCELLANEOUS.

There is a Naval Reservation in this health district. It is in the barrio of Olongapo, municipality of Subic, with 9,111 inhabitants, according to the official census for 1918.

This barrio is governed by the Naval authorities and its sanitation is also under their control.

This barrio may be presented as a model of excellent rural sanitation with good pavement, clean and well conserved streets, parks and plazas, good and safe water supply, good disposal of excreta and refuse collection and with a small but very well attended hospital with the services of native nurses for the special care of infants.

The benefits of the reservation reach to the municipality of Subic and it is a practical and excellent demonstration of the good service that may be instituted for the welfare of the people by the municipality and the people by directing their combined activities and enthusiasm towards the accomplishment of this end.

TWELFTH HEALTH DISTRICT, PROVINCE OF NUEVA ECIJA.

(Senior Surgeon TEOFILO CORPUS, M. D., *District Health Officer.*)

ORGANIZATION.

Medical Inspector Felipe Arenas was in charge of this health district until March 1, on which date he was relieved by Senior Surgeon Teofilo Corpus.

No change other than the increase in the number of assistant sanitary inspectors from 8 to 30 was made in the health organization of this health district.

During the epidemics the sanitary personnel of the province was shifted and centralized in the places where the intensity of the epidemic was greatest, this method contributing to the easier eradication of the epidemics.

A recommendation sent to the provincial board for the approval of the creation of four positions for district nurses was not considered by said board up to the time of closing this report. The work of these nurses will consist of instructing mothers in matters pertaining to the proper care of infants with regard to the reduction of infant mortality.

A letter requesting that improvements be made in the offices of the presidents of sanitary divisions was sent to all the municipal presidents of the province and many of them answered satisfactorily.

The district health officer requested from the provincial board authorization to purchase an automobile for the exclusive use of his office, but no action has yet been taken by said board with reference to this matter.

FINANCIAL STATEMENT.

Fourteen thousand nine hundred seventy-two pesos and ninety-four centavos was the appropriation made by the municipalities of this health district as contribution to the health fund of this province and the province appropriated an equal sum, making a total of ₱29,945.88 for sanitary purposes. Considering that the population of this province according to the last official census is 227,636, the per capita contribution is ₱0.13.

The expenditures of this health district during the year amounted to ₱37,061.31 more than the revenues, but the deficit was covered by the balance remaining in the year 1918, and there still remains at the end of the year a balance of ₱15,854.89.

VITAL STATISTICS.

During the year the number of deaths has increased very markedly due to the existence of the epidemics of smallpox and cholera.

The number of births has been decreased owing to the increased mortality from the last epidemics.

The infant mortality-rate has been increased due to the last epidemics of cholera and smallpox and to the existence of dysentery among infants.

The number of deaths without medical attendance has slightly decreased for the reason that little by little the people as a whole are becoming enlightened as to the benefits of medical science.

It is noted in table D that deaths under 30 days have been decreased in this province as compared with those of 1918, and the free and wide distribution of tikitiki might account for this fact because many infants died in the past from beriberi.

From the age of one month to 14 years the death rate has markedly increased owing to the fact that epidemics of cholera, smallpox and dysentery have made more victims among children than among adults.

MOST COMMON DIAGNOSES USED.

Mortality from beriberi in infants is practically nil for the year, probably due to the liberal distribution of tikitiki. The increase of beriberi in adults might be due to the present crisis of staple foods which prevents the obtaining of a balanced diet among indigent people.

It is to be noted that in spite of the absence of death of infants from beriberi there is an increase in the death rate of beriberi in adults and convulsions. This fact might be due to mistaken diagnoses.

The number of diarrhoea cases has also increased since the appearance of cholera and may be due to the fact that cases of cholera have been diagnosed as diarrhoea.

The number of malarial cases has also increased and the increase probably is due to cases of communicable diseases having been diagnosed as malaria.

COMMUNICABLE DISEASES.

It can be seen in Table H that there were a great many deaths due to preventable diseases.

Smallpox.—In January 9 of the 26 municipalities within the province were infected with smallpox, and the epidemic was severest in the months of June, July, August and September, having reached its lowest stage in December.

Strict quarantine was instituted in all these cases and the epidemic was so extensive that all the Constabulary and municipal police available were

put on quarantine duty, and the health officers were forced to put on as guards of the quarantine the "tenientes concejales" and teachers of public schools. The teachers were also employed as voluntary vaccinators.

Cholera.—The first case was registered in Aliaga in the first part of April which was diagnosed as a case of dysentery. This case was followed by the father, who lived in another municipality, contracting the disease after having visited his son who had already been attacked by the disease as noted above. From these cases, as well as others proceeding from the neighboring province of Tarlac, the great conflagration of cholera in this province started.

Only routine measures were taken to control the disease.

Dysentery.—The morbidity rate of this disease was 727 per 100,000 population and was heaviest in the months of June and September.

Some of the cases and deaths reported as dysentery were probably real cases of cholera.

No special sanitary measures were taken to control the epidemic.

Influenza.—Influenza again increased in the months of February, March, August and September, but the morbidity rate was only 62 per 100,000 population.

Rabies.—Twenty-two cases and five deaths were registered from rabies. Of the number who received antirabic treatment five died.

Ordinances compelling the muzzling of dogs are not enforced by the local authorities.

Leprosy.—Seventeen lepers were collected during the year, five of whom died in the isolation house.

VACCINATIONS.

Monthly remittances of vaccine virus for the vaccination of all the inhabitants of the health district were sent during the year, but only 161,000 persons were vaccinated.

Some difficulties were encountered in the vaccination work owing to the prejudice of simple people, but all difficulties were solved satisfactorily by the district health officer by cooperating with the municipal authorities.

MEDICAL RELIEF.

Thirty-one dispensaries were in operation during the year as compared with 17 during the last year. The public dispensaries are very inefficient as yet in regard to the discovery and detection of communicable diseases since people do not usually come for consultation on the one hand and the lack of a suitable room in the various municipalities and other necessary materials on the other hand.

Five new "Gotas de Leche" were added during the year with regard to the solution of the problem of infant mortality.

Of all the existing women's clubs there is but one having a two story sanitary model house of its own. This is the Puericulture Center of Cabanatuan. The institution is run by a private physician and the woman's club and the district nurses of the province. Said institution has for its principal aim the giving of instruction and treatment to parturient mothers and the feeding of infants.

It is only in Cabanatuan where the parturient mothers are greatly benefited by the services of the nursing organization. In the other municipalities, due to lack of funds to appoint nurses, the parturient mothers are entirely in the hands of untrained midwives.

MEDICAL INSPECTION OF SCHOOLS.

The schools inspected were found in good sanitary condition. The pail system is used in public schools for disposal of excreta. The pails in some schools were sometimes found insanitary, due probably to lack of personnel to keep the pails in a sanitary condition.

WATER SUPPLIES.

There was a total of 76 artesian wells as compared with 31 in 1918 and there were 50 sanitary dug wells as compared with 35 in the last year.

However, the majority of the barrios are using surface well water for drinking purposes, which furnished unsafe drinking water.

DISPOSAL OF EXCRETA.

An ordinance enforcing the installation of Antipolo systems for disposal of excreta in all public places and private houses was submitted to all the municipalities of this province. Only six municipalities approved it, but did not enforce it.

There were two Antipolo systems newly installed at Cabanatuan in private premises and seven in public places, and this was the only work done in the premises.

MISCELLANEOUS.

The laboratory work was limited to the examination of routinary specimens, such as blood for malaria and leprosy and sputum and urine.

Several cuts for educational posters in sanitary matters have been sketched by this office, copies of which were distributed to the different municipalities.

At the celebration of garden days, booths pertaining to health service were exhibited.

Printed matter in local dialect to disseminate knowledge for the prevention of common communicable diseases was distributed free and likewise posters were shown.

In the clean-up week the public schools have played the most important part in the work.

 THIRTEENTH HEALTH DISTRICT,
 PROVINCE OF TARLAC.

Dr. JUAN NEPOMUCENO, *President of Sanitary Division, and Acting District Health Officer.*

ORGANIZATION.

No changes nor improvements have been made during the year in the health organization of this province.

FINANCIAL STATEMENT.

Nine thousand one hundred ninety eight pesos and forty one centavos is the appropriation made by the municipalities of this province as contribution to the health fund of same and an equal amount was appropriated by the province, making a total of ₱18,396.82 as general contribution, which represents a per capita of ₱0.11, considering that, according to the last census for 1918, the population of this province is 172,022 souls.

VITAL STATISTICS.

The death rate in this province in the present year is lower than that registered in 1918, but higher than that of 1916 and 1917, due to the epidemics of smallpox, dysentery and cholera that visited the province in 1919.

The infant mortality remains at a high rate due principally to smallpox and dysentery epidemics registered.

The deaths attributed to beriberi in the present year were three times those of the year 1918, but as this fact has occurred while an epidemic of cholera, dysentery and smallpox passed thru the province, and there being more than 90 per cent of deaths reported without medical attendance, it is not ventured to establish that many of the deaths diagnosed as beriberi were really cases of the above-mentioned diseases.

COMMUNICABLE DISEASES.

Smallpox.—Smallpox was a continuation of the epidemic in the past year and at the close of the present report the epidemic was not yet considered under control.

Cholera.—Cholera, which reappeared in the month of July with seven municipalities infected, was put under control in November.

Dysentery.—Dysentery made its appearance in the same month that cholera appeared but in December only one case without death was registered.

No special measures were taken for the control of these epidemics but the routinary ones and no special mention is reported by the district health officer with regard to this matter.

MEDICAL RELIEF.

No new public dispensaries have been established during the year and no work has been done toward the reduction of infant mortality in this province and in the public dispensary maintained by the woman's club of Tarlac 46 children have been attended during the year.

The work done by the district nurses was insignificant as shown in table P.

INSPECTION OF SCHOOLS.

The schools inspected were found in good sanitary condition, but the same cannot be said with respect to the disposal of excreta as it was found unsatisfactory from a sanitary standpoint.

WATER SUPPLIES.

No new artesian wells were drilled during the year and only 39 sanitary surface wells were dug. Therefore the condition of this province with reference to water supplies remains the same as in the previous year and no recommendations are made nor steps taken by the district health officer to remedy the actual situation.

DISPOSAL OF EXCRETA.

The ordinance enforcing the use of the Antipolo system for disposal of excreta was for the second time submitted to all the municipalities, but the ordinance was not considered by the municipalities and for this reason only six private residences established the Antipolo system and only about 50 families in the whole province use the sanitary method for the disposal of excreta, the remainder using any place for such purpose.

MISCELLANEOUS.

None meritorious mentioned.

FOURTEENTH HEALTH DISTRICT,
PROVINCE OF PAMPANGA.

(Senior Medical Inspector FERNANDO GONZALEZ SIOCO, M. D.,
District Health Officer.)

ORGANIZATION.

The same organization as that of 1918 has been followed this year.

Positions for three more sanitary inspectors were created during the year and twenty temporary sanitary inspectors employed during three months of the cholera epidemic.

Originally there were two provincial nurses and two public welfare inspectors, but one nurse resigned at the close of 1918 and the position vacated has not been filled.

The two original positions for public welfare inspectors still exist, one was filled by a graduate midwife and the other remains unfilled.

Prompt reporting of communicable diseases is made by telephone or telegraph and by letter in the absence of same.

The district health officer has been supplied with the service of an automobile.

FINANCIAL STATEMENT.

The amount appropriated from municipal funds as contribution to the health fund of the province was ₱15,069.29 and an equal amount was appropriated from the provincial fund, making a total of ₱30,138.58. The population of this health district is estimated at 257,641 inhabitants which gives ₱0.12 per capita as contribution of the province for sanitary purposes during the year.

VITAL STATISTICS.

Although during the year 1919 there have been epidemics of cholera and dysentery throughout the whole province, both lasting about eight months, yet the mortality in 1919 is less than that of 1918.

No statement is made by the district health officer to explain the high rate of infant mortality registered in his health district which, it appears, has been due to "convulsions," "congenital debility," "beriberi," and "diarrhoea and enteritis," as can be seen in Table G.

The most common diagnosis used as cause of death as shown in Table G remains practically at the same rate as that of last year, except malaria and beriberi, which are greater.

COMMUNICABLE DISEASES.

Thirty-two and twenty hundredths per cent of the total deaths registered in this province correspond to communicable diseases. Tuberculosis occupies the first place, then cholera, dysentery and typhoid fever.

Smallpox.—There has been a small outbreak of this disease during the early and middle portion of the year, the cases occurring mostly in places or barrios where the general vaccination of 1918 was not made or was not carried out efficiently.

No special measures were taken for the control of this outbreak.

Cholera.—At the beginning of the year some towns already had the disease in apparently sporadic form, but about the month of May it began to develop in the form of an epidemic, indubitably due to the fact that the first cases registered were not given importance, and that no drastic measures were taken for the control of said cases, though the district health officer explains the spread of the cholera epidemic in the following manner:

“* * * its propagation having been due probably to a virulence of the microorganisms of former carriers, to runaways from infected houses and barrios, to the washing of soiled garments in public water supplies, to flies, and more particularly to the bad habits of the people in celebrating the deaths of their kin by a free-handed and wholesale eating and drinking (katapusan) feast, etc.”

In this epidemic, besides the routinary sanitary measures taken, the distribution among contacts of sulphuric acid solution was resorted to with fairly good results.

The administration of sulphuric acid as a prophylactic measure was first looked at with suspicion by the people, but upon finding that contacts who did not drink this medicine easily contracted the disease, the others, who at first refused it, accepted it at last. The district health officer states that very few indeed, if any, of the contacts who took it regularly contracted the disease later.

The Provincial Commander, Captain Telesforo Martinez, and his Constabulary force, deserve special mention for thier excellent service rendered in the maintenance of quarantine.

Dysentery.—An epidemic of dysentery occurred this year at the same time the cholera epidemic occurred and especially during the months from June to September. In some towns the dysentery epidemic was more severe than the cholera epidemic.

Influenza.—Mild cases of this disease have occurred in this health district during the latter part of November and until December with some pulmonary complications.

No special measures, except routinary ones, were taken for the eradication of the epidemic.

Rabies.—Six persons were bitten by suspected rabid dogs and all were given antirabic treatment.

The ordinance concerning the muzzling of dogs, in spite of insistent advices to the presidents of sanitary divisions or directly to chiefs of police, had not been enforced with regularity.

Leprosy.—Seven lepers were apprehended during the year. The detection of lepers by other persons is usually made thru anonymous letters addressed to the office of the district health officer.

VACCINATION.

In order to prevent the recurrence of a smallpox epidemic, a systematic vaccination is being carried out in this health district, especially in the following groups of ages: 1st, at birth; 2d, at five to eight years, and 3d, at fifteen to eighteen years of age.

MEDICAL RELIEF.

Owing to the deficient amount of health funds available for medicines, it was not possible to establish new dispensaries and so during the year only medicines were given to cholera and dysentery patients.

With regard to infant welfare, four woman's clubs were formally established. They only exist in name with the exception of the one at Bacolor, which performed fairly good work with regard to the reduction of infant mortality.

To diminish the mortality of children, the public welfare inspectors stayed one week in each town to deliver lectures about infant care, maternity care, sanitation, and disease prevention, and also attended calls for maternity cases. The district nurse also performed such duties as are usually performed by the public welfare inspectors.

INSPECTION OF SCHOOLS.

Owing to the epidemics the inspection of schools could not be carried out as regularly as it should, but those inspected were found in good sanitary condition.

WATER SUPPLY.

Most of the municipalities of this health district are already provided with artesian wells. Others use river, surface well, or rainwater preserved in jars or cisterns for drinking purposes.

Only one artesian well was drilled during the present year.

DISPOSAL OF EXCRETA.

The sanitary ordinance enforcing the Antipolo system for the disposal of excreta also met the same opposition as it received in some of the other provinces. The most common reason is the high cost of material, but the district health officer states that the cost of an Antipolo closet in the province varies from ₱16.00 to ₱24.00.

Only seven closets of the Antipolo system and four septic tanks with flush closets were built during the year.

MISCELLANEOUS.

There is a laboratory in the province but of little use and only routinary work is done.

Most of the markets existing in this province are built of concrete and their sanitary condition is good with the exception of their surroundings.

In all municipalities there are ordinances for the protection of food as well as for the handling of same, but the police force seems to ignore the enforcement of such ordinances.

With reference to the coöperation of the police force in enforcing the municipal ordinances, the district health officer submits the following comment:

"On some occasions the writer has also called the attention of these officers (chief of police and policemen) to some breach of the ordinances committed in their sight, but although the policemen would do what is commanded, at a later visit perhaps the same writer may see likewise that the same fault is committed by the same person before the very eyes of the same policemen.

"So long as the law does not specifically state that it is the duty of the municipal police force to see that the municipal ordinances are strictly complied with, and so long as the law does not state the punishment to be received by the infractors of ordinances, no municipal ordinance may be efficiently carried out all over the Philippine Islands. The hardest

work found by the writer in his several campaigns for sanitary improvements in his health district was the lack of coöperation on the part of the police force."

Several new ordinances have been drafted and enacted during the year but some still remain pending the approval of the authorities concerned.

The plan carried out this year in the clean-up week is the same as that of former years and with the same success.

FIFTEENTH HEALTH DISTRICT, PROVINCE OF BULACAN.

(Medical Inspector MANUEL RAMIREZ, M. D., *District Health Officer.*)

ORGANIZATION.

No changes have been made in the health organization of this health district which remains the same as that of the past year.

The headquarters of this health district having telephone connections with all the municipalities of the province, daily reports by phone of cases of communicable diseases are received in the office of the district health officer.

FINANCIAL STATEMENT.

The sum appropriated by the municipalities of the province as contribution to the health fund of the province was ₱21,882.39 and that appropriated by the province was ₱20,000, amking a total of ₱41,882.39, not including the balance at the end of 1918 and other revenue, and as the population of this province given in the last official census for 1918 is 248,863, it would appear that ₱0.16 is the contribution per capita of the Province of Bulacan for sanitary purposes.

VITAL STATISTICS.

The high mortality caused by the epidemic of influenza and smallpox in 1918 was reduced in 1919, but it was higher than in 1916 and 1917 due to the continuation of the epidemic of smallpox in 1919 and the appearance of cholera and dysentery in the same year.

The increased mortality in children under one year of age in 1919 was due to various factors, among which may be mentioned the lessening effect of influenza on the vitality of the people as well as of the above mentioned epidemics whose ravages, although they are essentially infectious diseases, may very well be favored by the lowered vitality of the population.

There is a tendency in this health district to abandon the diagnosis of "convulsions" as cause of death as may be seen in Table G. This is due to the establishment in this health district of the Automatic Health Control in which the sanitary personnel receive more sanitary instructions than in other health districts and the making of diagnosis is more efficient.

The increase of mortality from beriberi is probably due to a mistake in diagnosis. The last epidemic of influenza left as a sequela polyneuritis of different varieties and many of these have been diagnosed as beriberi.

Malaria appears in towns bordering along the mountains where it is endemic as epidemic forms, but it has a tendency to reduce every year due to the educational campaign and quinfication undertaken by the health service of the province.

COMMUNICABLE DISEASES.

The predominance of the so-called water-borne communicable diseases in the total mortality of this health district is due to a limited extension of waste disposal system rather than to water supply. The province of Bulacan has at present fairly good water supply with good artesian wells, except in remote barrios, while the disposal of waste is in an incipient stage.

Tuberculosis in the province is mostly of the pulmonary type. The same factors which maintained this disease in other provinces with a mortality higher than the most fatal epidemic are applicable to this health district, and no efficient work may result in a remarkable reduction in mortality from this disease other than an extensive educational campaign in the case of incipient cases and the danger of highly communicable cases.

The epidemic of smallpox was a continuation of that of 1918. The cases of the present year were found in the remote barrios where vaccination has not been thoroughly completed, and this fact, coupled with the ignorance of the people as to the advantage of strict quarantine, contributed greatly to the slow and less efficient means of suppressing epidemics.

Smallpox emergency hospitals were established in Malolos and Paombong thru the financial help of their respective councils, and the epidemic was not only rapidly and easily controlled but better care was given to patients.

The emergency hospital at Paombong was opened on January 13, 1919, and closed on March 4, 1919. The total cases admitted were 69 and ₱774 was the cost of operation. In Malolos 109 cases were admitted and the cost of operation was ₱831.20.

The municipal council of Malolos appropriated a daily allowance of ₱0.30 for food for every mother accompanying the sick child in the hospital. The municipality of Paombong being short of funds, did not give any allowance.

The common belief among the families of the sick that vaccination of other members of the family is contraindicated during epidemic times was easily met by citing fresh and close examples of vaccinations having saved members of an infected family or at least made the infection, if not avoidable, sufficiently light to annul a fatal result.

Cholera.—A small number of cases of cholera scattered in some municipalities of this health district at the beginning of the year was registered. These cases disappeared and again appeared in April. Measures were immediately taken by mobilizing all available personnel, including vaccinators, and placing them in the barrios infected. The efforts of the Service to localize the infection in the two towns infected were crowned with success. An emergency hospital was established in Hagonoy and another in a barrio of the same municipality, the municipal council having appropriated the necessary funds. Immediately the number of cases subsided, the highest number reached being only six per day. The fatality rate among those hospitalized was only 47 per cent while the fatality rate among those not hospitalized was 92 per cent.

The routine treatment of the contacts and carriers by sulphuric acid lemonade and calomel tablets, in incipient cases applied in the past epidemics was continued in the present with great success. Many cases among children have been observed during the epidemic which may be accounted for by the ignorance of mothers in regard to proper care.

The sulphuric acid lemonade is expended largely by free distribution among the infected barrios with instruction that all the inhabitants take a tablespoonful of this lemonade three times a day.

Dysentery.—Early in the year sporadic cases of dysentery were being discovered in many towns of the province, and steps were taken at once to control the disease which developed later into an epidemic.

The district health officer stated that this disease was considered by the people as a milder disease so that it was apt to be negligible in sanitary measures, and thereupon the sanitary personnel were duly notified of this fact, directing them to exert their efforts in suppressing the disease to prevent its becoming epidemic.

The type of dysentery registered is apparently bacillary as it is highly contagious and easily yields to antidysenteric serum treatment, especially when the serum is given early. Likewise, the district health officer stated that it has been observed in few selected cases that antidysenteric serum injected in contacts protects them from infection.

Influenza.—The cases registered were as protracted cases of influenza from the last great epidemic.

Rabies.—There was a slight increase in the number of persons bitten by rabid dogs during the year, to whom antirabic treatment has always been applied with the least possible delay. Muzzling of dogs has not been enforced because it is impracticable unless the Service is ready to undertake the muzzling of ownerless ones.

VACCINATION.

More than one half of the population of this health district was vaccinated during the year with 65 per cent positive results which number in addition to vaccination performed in the past year apparently covers with protection all the inhabitants of this province. It is feared, however, that much could be done yet in the distant barrios where the people are not yet thoroughly convinced as to the value of vaccination. A campaign of vaccination thru the use of "family Cards" will be the ideal procedure to avoid concealment.

MEDICAL RELIEF.

No new public dispensaries were opened in this health district during the year and those already existing have rendered successful work to the public.

Calls and assistance in accidents and dystocic labors are immediately attended to by sanitary personnel within their districts and in case more help is needed the district health officer or the personnel of some other division are easily available thru phone and transportation is made rapid thru the service automobil.

It is noted that the mortality rate from puerperal condition is gradually diminishing. The children welfare department of this health district has as one of its aims the eradication of the high mortality from this condition thru lectures and conferences with the midwives and medical help to the patients. The duty of district nurses is strictly confined to making house-to-house inspections with a view to visit mothers in their homes where they can be better instructed not only on the care of their children but also on general hygiene and sanitation, and this policy will be productive of good results, especially in the reduction of infant mortality.

The work of district nurses could not be more varied during the first two quarters of the year owing to the fact that they were attending emergency hospital cases of smallpox, cholera and dysentery and they have not dedicated all their work to their regular duties as district nurses. Nevertheless, the total number of unit work done by a nurse in 1919 was more than that performed in 1918 as can be seen in Table P.

MEDICAL INSPECTION OF SCHOOLS.

In general the public schools of the province, except those in rented houses, are very satisfactory from a sanitary standpoint. Most of the central schools have at present two Antipolo closets, one for boys and one for girls.

WATER SUPPLIES.

Fifty-one more artesian wells were drilled during the year. With these additional wells more than one half of the population of this health district use artesian well water for drinking purposes. More artesian wells will be drilled every year as the province has two drilling machines constantly in use.

DISPOSAL OF EXCRETA.

The objection of private individuals to establish a sanitary disposal of excreta in their homes, because there are no sanitary closets in public buildings, has no more ground as in many municipalities Antipolo closets have already been established in schools, municipal buildings and markets. Some municipal councils object to the passage of an ordinance enforcing the establishment of such closets on the ground that the cost of materials needed is high, but this argument has been refuted by the sanitary personnel of the province. Vitrified clay pipe for Antipolo closets can be easily obtained from Baliuag, a municipality of this province, at a net cost of ₱0.50 a piece. One complete Antipolo closet for a family of five may cost from ₱10 to ₱50 according to the kind of materials, light or strong, used for its construction.

MISCELLANEOUS.

In the provincial laboratory, examination of routinary specimens is being undertaken by the district health officer. This laboratory has sufficient materials for undertaking extensive examination but this cannot be done due to lack of technical personnel and the district health officer can devote but a fraction of his time to this work.

Only 549 home gardens or about one seventh of those reported in 1918, have been reported during this year. In this report are not included school gardens but only those undertaken by the Service and the woman's clubs.

Though the service has not been able to use its newly acquired projection apparatus for all conferences held, still during the epidemic time the apparatus has been of service to illustrate to the people the danger of contaminated food and drink, especially in the towns infected.

With few exceptions all municipalities have taken part in the clean-up week contest conducted by the Public Welfare Board and a prize of ₱100 was given to one of the woman's clubs.

SIXTEENTH HEALTH DISTRICT,
PROVINCE OF BATAAN.

(Surgeon DOMINGO TABLAN, M. D., *District Health Officer.*)

ORGANIZATION.

This province was separated from the fourteenth health district and constituted an independent health district in March, 1919.

The province is composed of twelve municipalities, eight of which were organized into two sanitary divisions and the rest, due to lack of funds, were organized into boards of health. To each sanitary division was assigned a physician as president of sanitary division and one sanitary inspector to every municipality embraced by the sanitary division.

One female registered nurse was also appointed with headquarters in the capital of the province for duty in connection with infant welfare work.

The duty of filling out certificates of death performed in the past year by municipal secretaries in accordance with the Administrative Code was given in the present year to the sanitary personnel by which measure the diagnoses are more accurate and therefore the outbreak of a communicable disease can be more easily noted.

FINANCIAL STATEMENT.

The sum appropriated by the municipalities as contribution to the health fund of the province was ₱2,559.31, which is five per cent of their general funds, the minimum appropriation allowed by the Administrative Code. As the province has contributed an equal sum, ₱5,118.63 was the total sum available for sanitary purposes, but as 58,380 is the population of the province according to the census for 1918, it may be concluded that ₱0.09 is the contribution per capita of the province for sanitary purposes.

In spite of the fact that from the item of salaries and traveling expenses of personnel ₱318 was transferred to increase the amount appropriated for medicines, the medicines purchased were not sufficient to meet the medical needs of the province.

VITAL STATISTICS.

The number of deaths registered in the present year exceeded that of the year 1918. This fact was due to the continuation of the influenza epidemic and to smallpox and dysentery epidemics. Also 14 deaths from cholera were registered, but this number of deaths registered from said cause cannot be considered as of epidemic character.

Infant mortality remains as high as in the previous years, while the rate in 1919 is lower than in 1918. Probably the high infant mortality reported in this province is due to the fact that not all births registered during the year were reported at the time of closing this report.

The great number of deaths from convulsions reported which otherwise is practically the same as that of previous years, is due to the lack of sanitary personnel, the diagnoses being made by persons who cannot make a scientific diagnosis and the majority of diagnoses are made by municipal secretaries who frequently make erroneous diagnoses.

A remarkable decrease in malaria is noted, but no definite conclusion could yet be reached because the province having been organized in the present year, insufficient length of time has passed to ascertain whether this disease has really decreased, or whether its decrease is due to erroneous diagnoses.

COMMUNICABLE DISEASES.

Dysentery.—Bacillary dysentery increased as compared with previous years. This disease is always prevalent in the province due to the same causes as those found in other health districts, that is to say, due to failure to provide for disposal of excreta and refuse as well as to prevent nuisances.

Cholera.—Cholera was only registered with sporadic cases and proceeding from neighboring provinces, but did not constitute an epidemic.

Typhoid fever.—Deaths from typhoid fever were also increased but as the diagnoses were not made bacteriologically, it is probable that many of these deaths were really due to other diseases.

Smallpox.—Smallpox which appeared in March of the past year continued during the present year and the municipalities most afflicted were Abucay, Orion, and Orani.

Rabies.—Four persons were bitten by rabid dogs, of whom only one was saved by antirabic treatment applied in time and the other three died because the parents of the patients failed to notify the health authorities.

Leprosy.—Three persons suffering from leprosy were captured and sent to San Lazaro Hospital in Manila.

VACCINATION.

An intensive and extensive vaccination against smallpox began in January, a party of 30 vaccinators being sent by the Central Office to aid the sanitary personnel of the province.

Several difficulties had to be overcome in the vaccination campaign because the prejudice of mothers did not permit the vaccination of the newly born children, but finally practically all the population of the province was vaccinated.

MEDICAL RELIEF.

Every municipality within the health organization is provided with a public dispensary which is attended once a week by the president of sanitary division concerned and outside of this day, by sanitary inspectors. Very little work has been done by these dispensaries due to lack of funds for giving free medicines.

A woman's club has been organized in the municipality of Balanga which has for its purpose the undertaking of an educational campaign against infant mortality and to increase food production. The services of a registered nurse were obtained to visit barrios and give lectures to pregnant women and mothers regarding the care of children.

INSPECTION OF SCHOOLS.

With regard to cleanliness, ventilation and light, the public schools were found to be in good condition, but not with reference to disposal of excreta, excepting only the public schools of Balanga and Orani which have closets of the Antipolo system.

WATER SUPPLIES.

Twenty-one more artesian wells were drilled during the year 1919, making a total of 148 wells available in the province. All the municipalities, except Bagac and Moron, have artesian wells and the drilling of an artesian well is very cheap in this province because potable and safe water can be found with great facility.

DISPOSAL OF EXCRETA.

At the beginning of the present year, there was only one Antipolo closet in the whole province, this closet being in the private house of the provincial governor. A draft of a municipal ordinance enforcing the establishment of Antipolo closets for disposal of excreta was submitted to all the municipalities, but only one (Lima) passed said ordinance. The others refused, stating that it is neither necessary nor urgent.

The 65 new Antipolo closets constructed in the present year can be found in certain private houses whose owners were convinced by the district health officer as to the benefit to be derived from this measure.

The cost of this kind of closet in this province is approximately from ₱10 to ₱15.

MISCELLANEOUS.

During the year a new municipal cemetery was opened in Lima.

The district health officer, presidents of sanitary divisions and district nurses gave several sanitary lectures in barrios on occasions of fiestas, which were received by the people with satisfaction.

Clean-up week was carried out in accordance with a previous program and a prize of ₱100 was offered and won by the woman's club of Balanga and schools of Samal.

 SEVENTEENTH HEALTH DISTRICT,
 PROVINCE OF RIZAL.

(Medical Inspector FELINO SIMPAO, M. D., *District Health Officer.*)

ORGANIZATION.

The status of the health organization in this province is the same as that of 1918.

One more permanent sanitary inspector was appointed for the municipality of Pasig.

Besides the permanent sanitary personnel several positions of temporary inspectors were created.

In March, ten temporary vaccinators were appointed for a period of three months.

Six temporary sanitary inspectors were appointed during the pilgrimage in Antipolo; and in August ten were more appointed for the cholera campaign.

FINANCIAL STATEMENT.

Twenty thousand six hundred forty pesos and fifty-eight centavos was the sum appropriated by the municipalities as contribution to the health fund of the province and an equal sum was appropriated by the province, making a total of ₱41,281.16 to which was added ₱830.83 as balance carried over from 1918, making a grand total of ₱42,111.99 for sanitary purposes in 1919.

Of this sum ₱38,825.59 was expended, leaving a balance of ₱3,286.40 at the end of the year.

Sixteen centavos is the per capita appropriation during the present year by both the municipalities and the province for sanitary purposes, considering that according to the last census, the population of this province is 230,205.

VITAL STATISTICS.

Deaths registered during the year were greater in number than births in view of the epidemic of dysentery and cholera which passed through the province.

The rate of death noted is more than what it really is because same was obtained from a population estimated on a basis of only 149,894 while the population given by the census of 1918 is 230,205.

If the population given by the census is considered, the birth rate will be less than what is noted in the report, it being due to the fact that not all the births registered during the year were reported.

The infant mortality in this province remains at a high rate and no explanation of this fact is given by the district health officer. The diagnoses most commonly used are: convulsions, simple meningitis, congenital debility, beriberi, and diarrhoea.

COMMUNICABLE DISEASES.

The prevalence of high mortality from communicable diseases is due, in accordance with the report of the district health officer, to the lack of attention on the part of the people to the prophylactic measures advised by the health officers. This is the reason why communicable diseases, especially tuberculosis, prevail.

Smallpox.—The cases registered during the year 1919 are simply a continuation of the epidemic of 1918, but during the month of May the epidemic was completely controlled.

Cholera.—Cholera appeared in January infecting seven towns. Cases have continually been reported as may be seen in Table F. A notable increase was noted in June and in July when great extension was gained by the epidemic.

The extension of the epidemic is attributed by the district health officer to the typhoon and flood that followed which overran the entire province in July. Many municipalities were under water and by means of which the infection easily developed.

No special measures but routinary ones were taken for the control of the epidemic (the same as in the epidemic of smallpox) and the cases which occurred in places near the City of Manila were brought to San Lazaro Hospital.

Dysentery.—Cases of dysentery were registered during the whole year, but those occurring during the month of July were greater in number. Sanitary measures similar to those taken against cholera were carried out for the control of dysentery.

Influenza.—During the year, influenza did not appear in epidemic form as it did in 1918. Only very few cases occurred during the year.

VACCINATION.

General and systematic vaccination and revaccination have been carried out and if it appears that the number of vaccinations performed are more than the total population, it is due to the revaccination in the same persons.

MEDICAL RELIEF.

Twenty more public dispensaries were opened during the year, making a total of 40 in operation at the end of 1919.

Woman's clubs have been organized in each municipality, but only in name, and no work has been done with the exception of the woman's club and puericulture center of Malabon.

There are no district nurses in this health district, except the one at the puericulture center of Malabon who did not make any report of her work performed during the year.

INSPECTION OF SCHOOLS.

Almost all the schools, excepting those which are located far in the barrios, were inspected. All the schools inspected were found in good sanitary condition, but some are not provided with sanitary closets.

WATER SUPPLY.

Fourteen more artesian wells were drilled during the year. The district has a good supply of water because the municipalities of Pasay and Caloocan profited by the extension of the water supply system of Manila, besides the artesian wells. Only one municipality (Teresa) gets its water from unprotected lakes.

DISPOSAL OF EXCRETA.

All the municipalities have passed the ordinance for the Antipolo system of toilet, but some of them do not enforce strictly the provisions of said ordinance.

Many septic tanks were constructed in the municipality of Pasay because this municipality is considered a suburb of the City of Manila and many strangers have their residence there.

A greater number of closets of the Antipolo system were constructed in the Extra Cantonment Zone where special sanitary regulations are enforced.

MISCELLANEOUS.

Pasig has requested a loan of ₱80,000 from the Insular Government for the construction of a public market.

During garden days celebrated in the month of February there were exhibited pictures and models pertaining to sanitary matters and in the feria at Pasig a baby contest was held.

Clean-up week was carried out with success. Many prizes were distributed.

EIGHTEENTH HEALTH DISTRICT, PROVINCE OF CAVITE.

(Senior Surgeon EUFEMIO JARA, M. D., *District Health Officer.*)

ORGANIZATION.

This health district was organized into five sanitary divisions at the beginning of the year, in which are comprised the twenty municipalities of this province. A doctor is assigned to each sanitary division and one sanitary inspector to each municipality.

By this organization the number of doctors on duty as health officers in 1919 in this health district was 6 as against one in 1918 and 23 sanitary inspectors as against 8 in 1918.

FINANCIAL STATEMENT.

All the municipalities of this province set aside as contribution to the health fund of the province the maximum amount allowed by the Administrative Code, which amounted to ₱13,450.04, while the province, due to lack of funds, only appropriated ₱6,000 instead of a sum equal to that appropriated by the municipalities. The total amount available for sanitary purposes in this health district for the year 1919 is ₱19,415.04, which represents ₱0.12 per capita.

VITAL STATISTICS.

The death rate of this health district is too high and this is due to several causes. The first is that in Cavite is located the arsenal of the U. S. Navy in which more than 8,000 laborers are working, and as these laborers are considered as transients they are not included in the population of this health district, while death registrations among them are reported and included in vital statistics of this health district. The second reason is that for many years this health district has become an endemic focus of cholera and dysentery, due not only to the bad sanitary conditions of its towns, but also to the bad water supplies as well as to its peculiar topographical configuration.

The same may be said with reference to the high infant mortality registered in this health district for the period covered in Table C. The district health officer stated that many births are not registered, but this condition is the same as in other health districts, and the birth rate registered in this health district—40.57 in 1916, 43.98 in 1917, 35.44 in 1918, and 32.35 in 1919—is, in accordance with the births registered, what is considered the mean ratio for the Philippines.

The increase in the infant mortality rate for 1919 over that for the years 1916 and 1917 was due to smallpox and influenza in 1918.

With reference to the deaths registered by the most common diagnoses used in the Philippines, it is not singular to be inferred that in this health district 44.4 per cent of the total mortality registered was due to said causes if it is remembered that before 1919 the municipal secretaries or their clerks were in charge of making the diagnoses of those who died without medical attendance, as prior to this date this province had no sanitary organization.

COMMUNICABLE DISEASES.

Of the total deaths (5,645) registered in this health district, 1,781 were due to diseases perfectly preventable, such as cholera, smallpox, typhoid fever, malaria, and diarrhœa.

Smallpox epidemic.—The smallpox epidemic was a continuation of the epidemic in 1918 which took place throughout the northern towns of the province.

The epidemic was completely controlled in July by means of intensive vaccination performed by the sanitary personnel of the province with the aid of 20 Insular vaccinators. The morbidity was 918 per 100,000 population with 77 per cent of fatality among cases not hospitalized and 12.5 per cent among those hospitalized. An emergency hospital was established in the municipality of Cavite in which 16 cases were hospitalized.

Cholera.—Cholera is being registered every year in this province. An outbreak of this disease was registered since the month of June in which month three municipalities were infected. The infection extended and in August ten municipalities were reporting cases. From this month the cases were decreasing and the last registered was in November. Two hundred sixty-five per 100,000 was the mortality rate and 67 per cent the fatality.

One thousand four hundred fifty-seven specimens were sent to the Bureau of Science for examination for cholera, but only 80 were found positive among cases diagnosed as clinically positive and 40 as positive carriers in contacts.

For the protection of the navy yard and the laborers of the arsenal an examination of stools of all the laborers was made and those who were found positive were isolated in the hospital of the Naval Reservation until they were found negative after taking two consecutive examinations within a period of seven days. Also the naval authorities at our request placed at the doors of the arsenal basins containing bichloride solution at 1 per 10,000 in which all laborers were compelled to wash their hands before entering the Reservation. Lunch for noon was being brought by each laborer, drinking water furnished by the naval authorities and one tablespoonful of sulphuric acid solution taken before eating, and with these simple measures not a single case was registered among the laborers in the naval reservation.

Dysentery.—The first cases of dysentery were registered in January, and the prevalence of this disease continued during the whole year causing a morbidity of 156 per 100,000 population with 66 per cent of fatality.

Rabies.—Only one case of hydrophobia was registered and was discovered only after death, therefore the treatment could not possibly be applied.

Leprosy.—Twenty-three lepers were captured and twenty-one were sent to San Lazaro Hospital in Manila. Five lepers escaped from the detention house due to the negligence of the guards.

VACCINATION.

Twenty Insular vaccinators were detailed in this province to aid the provincial personnel in checking the epidemic, and during the year this party performed 145,645 vaccinations which practically covered the total population of the province. No difficulties were found in the performance of their duties.

MEDICAL RELIEF.

Fourteen new public dispensaries were established during the year in which were attended 3,090 adults and 2,874 infants of various afflictions.

No work has been done for infant welfare because the sanitary organization of this province was effected only in the present year and no nurses or midwives have as yet been appointed.

MEDICAL INSPECTION OF SCHOOLS.

The majority of public schools in this province were found not in good sanitary condition. They do not have sanitary disposal of excreta and the cleaning of schools is being done by pupils, because there are no janitors or persons employed for this purpose.

Several cases of trachoma were found in the public schools of Cavite, which were excluded from school and treated at home.

WATER SUPPLIES.

Ten more artesian wells were drilled during the year. This kind of water supply is only feasible in the towns located near the beach but it is impossible in those towns located at the mountains. Therefore, the majority of the population of this health district use spring, river, and surface well water for domestic and drinking purposes.

DISPOSAL OF EXCRETA.

Only the municipality of Cavite uses a pail system and tight vaults for disposal of excreta. In other municipalities only a number of the inhabit-

ants have established in their own home the Antipolo system. Only four municipalities have passed an ordinance with reference to the establishment of sanitary disposal of excreta, while in other municipalities the ancient insanitary system is in use.

MISCELLANEOUS.

All the municipalities of the health districts were inspected several times by the district health officer by riding in auto, calesa, on horseback, or walking.

The clean-up week was carried out in coöperation with the provincial authorities with a great deal of success.

NINETEENTH HEALTH DISTRICT, PROVINCE OF LAGUNA.

(Senior Medical Inspector VICENTE RIVERA SAYO, M. D., *District Health Officer.*)

ORGANIZATION.

This health district was one of those remaining unorganized into sanitary divisions during the past year, but effective January 1, 1919, the provincial board passed a resolution reorganizing this health district into eight sanitary divisions in which are included the 26 municipalities of this province (See Table A). The sanitary personnel of this organization is as follows:

Eight doctors as presidents of sanitary divisions, one district nurse for the municipality of San Pablo, 29 sanitary inspectors, one clerk, and one janitor.

Telephone service has been established in this health district and the office of the district health officer is connected with all the municipalities of the province, making it easy to obtain information on sanitary matters.

FINANCIAL STATEMENT.

Eighteen thousand six hundred seventy-nine pesos and twenty-four centavos was the sum appropriated by the municipalities and ₱10,000 by the province, making a total of ₱28,679.24 as contribution to the health fund of the province. The population of this health district is 195,371 according to the last official census for 1920 and therefore ₱0.15 is the contribution per capita of this province for sanitary purposes.

VITAL STATISTICS.

The total mortality in the present year as well as in the past year, was greater than the number of births, resulting in a decrease in the population of this health district. In 1918 this fact was due to the influenza epidemic and in the present year, to the epidemics of cholera, dysentery, and smallpox.

This province registered a higher mortality rate than any of the other provinces, which is due to the fact that the birth rate in this province is higher than in the other provinces and for the same reason registered a high infant mortality rate.

Malaria remained at the head of the diseases which caused the largest number of deaths since 1916, as may be seen in Table C, which is due to the special topographical configuration of this province.

The second place of causes of death is convulsions, which however not being diagnosed as a determinate disease could be considered as natural, if it is remembered that this province was sanitarily reorganized in 1919, and that previous to 1919 the municipal secretaries or their clerks were the only ones who made diagnoses.

The same may be said with respect to congenital debility which took the third place among diseases causing the greatest number of deaths.

It was not possible to obtain any data on beriberi previous to the year 1919, but it may be established that the number of deaths reported by this cause appears to have been exaggerated.

COMMUNICABLE DISEASES.

Tuberculosis.—Tuberculosis remained at the same rate as that of the previous years, which means that no specific work has been done for the reduction of this cause of death.

Typhoid fever.—Typhoid fever was registered in the province as of endemic character.

Smallpox.—The smallpox epidemic was the continuation of the smallpox epidemic of the previous year. As a result of vaccination, a decrease in the number of cases was noted after the month of March, but in the month of April, the municipality of Nagcarlan still registered 64 cases with no deaths. In July the epidemic was completely eradicated.

Nine hundred forty-nine cases with 533 deaths was the toll paid by the province to the epidemic in 1919, or a morbidity rate of 772 per 100,000 population and a mortality rate of 56 per cent.

No emergency hospitals or isolation houses were established. Cases were held in quarantine and only the intensive and extensive vaccination undertaken in the past year was continued in the present year.

Cholera.—Cholera, which appeared in the month of November of the past year, continued throughout the present year and 11 cases with 7 deaths were still reported in the month of December.

The morbidity rate was 559 per 100,000 population and the fatality rate 83 per cent.

The prolongation of the prevalence of cholera in this province as well as the high mortality rate registered were indubitably due to the inefficiency of the sanitary personnel of the province, because no other preventive measures were taken than the quarantining of cases which could not possibly have been maintained with efficiency due to the extensive area infected, and no emergency hospitals or isolation houses were established.

Dysentery.—At the beginning of the year 13 municipalities were infected with dysentery. The disease invaded other towns and reached its climax in August. Flies undoubtedly played an important part in the dissemination of the epidemic as none of the municipalities had established a sanitary system for the collection of refuse.

The morbidity rate was 186 per 100,000 population and the fatality rate 91 per cent. This very high fatality rate is due to the fact that the sanitary personnel had no knowledge of the majority of the cases until after death.

Influenza.—Influenza was eradicated in the month of February and only 80 cases with 20 deaths were reported.

Rabies.—Only two persons were bitten by suspected rabid dogs, both of whom were saved by the application of the Pasteur treatment. Muzzling

ordinances are not enforced by the municipal authorities, but 720 stray dogs were poisoned during the year.

Leprosy.—Eight lepers were captured and sent to the San Lazaro Hospital in Manila.

VACCINATION.

One hundred forty-two thousand one hundred fifty-three persons were vaccinated during the year. Of the inspections made 46,583 vaccinations were found with positive results. As in the past year 98,833 persons were vaccinated with positive results, it may be said that the whole population of this province is at present immunized against smallpox.

MEDICAL RELIEF.

Twenty new public dispensaries were established during the year, which added to the three in operation in the past year, makes a total of 23 dispensaries in operation at the end of the year.

The service rendered by these dispensaries has been received with gratefulness by the people who did not receive this benefit in the past years.

Considering the very high infant mortality registered in this province, no efficient work has been done to reduce it, as may be noted from the data in Tables O and Q. Probably the failure to reduce the infant mortality is due to the fact that the health organization of this province has been recently reorganized and that it has not yet been possible to extend the required services to all the communities of the province.

MEDICAL INSPECTION OF SCHOOLS.

Sixty-four per cent of the public schools were inspected and 95 per cent of the schools inspected were found in good sanitary condition, but only 15 per cent had toilets.

Scabies and dental caries were the most common affections found among pupils.

WATER SUPPLIES.

Twenty-three more artesian wells were drilled during the year, making a total of 109 artesian wells in the province, which benefit approximately 70,000 people. The other sources of water supplies are springs (many of which are in good sanitary condition), and rivers.

The municipalities of Los Baños and San Pablo constructed gravity systems and the municipalities of Majayjay, Nagcarlan, Pagsanhan, and Santa Cruz made applications for loans for the establishment of water works.

DISPOSAL OF EXCRETA.

The campaign for the establishment of a sanitary system for the disposal of excreta went very slowly as in the other provinces. This slow progress is due to the prejudice of the people, and more especially to the little attention given to this matter by the local authorities. Four hundred ninety-seven Antipolo closets were installed during the year, and of this number one fourth are in the municipality of Pagsanjan.

Septic tanks are not increasing in proportion to the other facilities.

MISCELLANEOUS.

In the provincial laboratory only 30 specimens were examined during the year.

Public lectures in regard to sanitary matters were given by the doctors, principally in the public schools.

A balance of ₱2,007 which remained at the end of the year will be expended for the establishment of a maternity ohme in the capital of the province.

TWENTIETH HEALTH DISTRICT,
PROVINCE OF BATANGAS.

(Medical Inspector PACIFICO LAYGO, M. D., *District Health Officer*.)

ORGANIZATION.

Medical Inspector Pacifico Laygo was detailed for duty in the Central Office in March, and Assistant Surgeon Francisco Velez took his place. Assistant Surgeon Velez was relieved in July by Senior Surgeon José Raymundo, and on having finished the commission given him, Medical Inspector Laygo again took charge of this health district.

No important changes were made in the health organization of this health district during the year, except the following minor ones.

For securing prompt health information and to keep in close touch with all the municipalities at all times, a telephone service was installed at the residence of the district health officer.

FINANCIAL STATEMENT.

A sum of ₱27,047.54 was set aside by the municipalities of the province as contribution to the health fund, while ₱13,000 was set aside from the provincial fund, making a total appropriation of ₱40,047.54 by the municipalities and the province for sanitary purposes.

The population of the province of Batangas for 1919 is estimated at 240,195. The contribution per capita to the health fund is ₱0.12.

A campaign is being made throughout the province to secure the maximum contribution allowed by law. Good results are expected from this campaign.

VITAL STATISTICS.

The death rate is still above normal due to smallpox, cholera, and dysentery epidemics which lasted until the third quarter, and partly due (according to the District Health Officer) to the shortage of foodstuffs, especially rice, which, of course, had some effect on the vital resistance of the people.

Infant mortality rate is still high due, according to the district health officer, to lack of proper prenatal and postpartum care, to smallpox and dysentery and partly to causes above noted. An extensive educational campaign is necessary, but it is believed that house-to-house visits by district nurses would prove more practical and effective than public conferences.

There is a decided decrease of mortality caused by beriberi in adults and by malaria. The main reason is the awakening of the people and their appreciation of the advantage of the mixed diet and the almost generalized use of quinine. The mortality from beriberi among infants is still high as the masses of the population are yet unaware of the real cause of the disease and its prevention.

COMMUNICABLE DISEASES.

Tuberculosis.—Tuberculosis has caused more deaths than any other disease during the year, dysentery and cholera coming next and then

smallpox. Typhoid mortality is rather high, though it was never present in epidemic form.

Smallpox.—Twenty-four of the 25 municipalities of the health district were infected, the incidence being especially high in Alitagtag. This infection is the continuation of that of the year 1918. An extensive and intensive vaccination and the establishment of emergency hospitals were the principal measures taken to control the epidemic. An emergency hospital was established in Lipa, but very few cases were hospitalized due to the fact that the greater part of the population is opposed to hospitalization.

Cholera.—Twenty-four towns were infected. Bolbok was the first one infected in February, and also it recorded the highest incidence and mortality. Of the total cases reported 142 were found positive bacteriologically, and of the 2,162 stool specimens from contacts examined 16 were found positive.

No special measures were taken for the control of this epidemic, but in December it was considered as controlled.

Dysentery.—All the municipalities were infected, causing 774 deaths. It must be noted that the rate of morbidity is very low and the fatality very high. This is due to the fact that the number of cases reported is not exact because no real survey of cases had been made and therefore not all of the cases were reported.

The measure used for the control of the epidemic was house-to-house inspection of infected districts to detect the unreported cases and extensive disinfection of excreta of patients.

Influenza.—Influenza of the present year was the continuation of that of the past year, and the cases were not so virulent as those of the previous year and the complications almost exceptional.

The high fatality noted in the table is erroneous because no accurate record of morbidity was taken.

Rabies.—Only one case was reported during the year. The muzzling of dogs is neglected by the executive officers throughout the entire province. Dogs run at large in all towns and at all times.

VACCINATION.

Practically one-half of the total population of the province was vaccinated during the year.

General vaccination was performed by a vaccinating party of thirty vaccinators from February to November.

In some isolated barrios vaccination is not well appreciated and the old belief that old persons, persons who had been attacked by smallpox, persons suffering from skin diseases and the pregnant women must not be vaccinated, is still well rooted.

According to the results of vaccination, said party was not very successful due partly to defective organization and partly to the fact that about one third of its time was devoted to cholera and dysentery work.

MEDICAL RELIEF.

One public dispensary, the one established at Lipa, was closed. This step had to be taken as the expenses incurred in the operation of said dispensary were not compensated by the results obtained. The average number of patients per week was below ten. On the other hand a new dispensary was opened in Bolbok.

No work has been done in infant welfare during the entire year. The district health officer states that he has observed that woman's clubs, puericulture centers, etc., do not perform any real practical welfare work as yet, being mere decorative associations at present. The provincial ladies are as yet prone to confine their usefulness to their homes, and do not appreciate that however great the sacrifices they may make in their efforts toward helping to lower the present high infant mortality, they will never suffice.

The nurses of the province are working for the control of epidemics, while nothing is being done in connection with the real work assigned to them.

MEDICAL INSPECTION OF SCHOOLS.

The general condition of schools is fairly good—clean yards, good ventilation, no overcrowding, and well lighted, except in occasional ones. The disposal of excreta is fairly safe with the exception of some barrio schools where there is no closet at all.

WATER SUPPLIES.

At the end of the year 10 artesian wells were in use throughout the province. Taal and Cuenca are provided with spring water piped to these places. Lipa and Batangas will soon have a more improved water service.

DISPOSAL OF EXCRETA.

The same conditions as were reported in 1918 are still existing. Municipal councils do not seem to pay attention to such an important question, and take no action on drafts of ordinances presented by health officers.

MISCELLANEOUS.

The provincial laboratory is a charge upon the health fund of the province, because its total revenue during the year amounted to only ₱198, but it renders a great deal of service to the sanitary work of the province.

During clean-up week the local health officials worked jointly with the local authorities and good results were obtained.

The principal plans submitted by the district health officer for the coming year are the following:

- (a) More emphasis to be given to infant welfare. All district nurses to be detailed in this work alone.
- (b) Creation of two positions for midwives, to give more attention to maternity service and to reduce mortality caused by puerperal state.
- (c) Improvement of dispensary service.
- (d) Systematic anticholera vaccination in the barrios where this disease is endemic.
- (e) Investigation of typhoid carriers in suspected districts.

TWENTY-FIRST HEALTH DISTRICT, TAYABAS PROVINCE.

(Senior Medical Inspector RAFAEL VILLAFRANCA, M. D., *District Health Officer.*)

ORGANIZATION.

This health district is composed of the Province of Tayabas and the subprovince of Marinduque. No changes have been made in the sanitary

organization of this province. Of the fourteen sanitary divisions, twelve pertain to the Province of Tayabas and two to the Subprovince of Marin-duque.

One bacteriologist was appointed to take charge of the provincial laboratory and one nurse for the municipality of Tayabas.

Thirty-three sanitary inspectors were also appointed temporarily to assist in cholera campaign and fifteen vaccinators for smallpox vaccination work.

Telephone service was established in 18 municipalities which made an improvement in the information methods.

FINANCIAL STATEMENT.

Fifty-six thousand eighty-six pesos and eighty-eight centavos is the total sum appropriated either by municipalities or province as contribution to the health fund of the province, and as 268,472 is the population of this health district the per capita contribution is estimated at ₱0.18.

Eight municipalities of this health district made application for loans for the purpose of constructing public markets, three for water works, two for artesian wells, and one for public closets.

VITAL STATISTICS.

The number of deaths registered in this health district during the present year exceeded that of births. This high mortality was due to the epidemics of smallpox, cholera, and dysentery which invaded the province.

The infant mortality rate is increasing since 1916 and the birth rate is lower than in previous years due probably to the fact that at the end of the present year some births registered were not yet reported at the time of sending the annual report.

This decrease in the number of births naturally increases the infant mortality rate besides the epidemic of smallpox and diarrhea and enteritis which claimed victims among infants under one year of age.

The deaths attributed to infantile beriberi were lower than those reported from the same cause in the last year due to the free and more extensive distribution of tiki-tiki among mothers and children suffering from beriberi.

Diarrhea and enteritis also caused many deaths especially among children under two years old and malaria remained with a high rate of mortality which is estimated at 10.24 per cent of the total mortality.

COMMUNICABLE DISEASES.

Of the total mortality 36.7 per cent was due to communicable diseases. The number of deaths from communicable diseases in 1918 was more than that registered in 1919, because those attributed to influenza and smallpox were in greater number than the deaths caused by dysentery, smallpox, and cholera in 1919.

Smallpox.—Smallpox was a continuation of the epidemic which began in 1918, but in the month of July of the present year it could be considered as controlled notwithstanding the continued registration of cases in only one municipality (Sariaya) which lasted until the month of September.

Cholera.—Cholera was registered in a sporadic character in this province in previous years, but during the period from May to September it acquired epidemic character and at the end of the year three municipalities remained infected.

Dysentery.—Cases of dysentery were reported since January but only in June it took epidemic character and at the end of the year eight municipalities remained infected.

The only exception in the routinary sanitary measures taken for the control of these epidemics was the establishment of ten emergency hospitals and isolation houses for the control of the smallpox epidemic and 21 places for isolation and treatment of cholera patients.

Influenza.—Only sporadic cases of influenza were registered.

The Anti-tuberculosis Association has established in the municipality of Lucena a branch in which an average of 12 patients per day is attended, but its existence is too short so as to establish a conclusion with regard to its efficiency.

WATER SUPPLIES.

Twenty-three new artesian wells were drilled and 24 sanitary surface wells were dug during the year. Besides these kinds of water supplies, there were also established complete water works systems in three municipalities.

These kinds of water supplies are used by about half of the total population of this health district and the rest use insanitary dug well, spring, river, and rain water.

DISPOSAL OF EXCRETA.

Of the 31 municipalities of this health district, 24 have approved the ordinance establishing the Antipolo system for disposal of excreta, but as shown in table "V" no great effort has been made for its accomplishment in view of the small number of toilets of the Antipolo system established during the year.

Of the 34 septic tanks with water closets newly established during the year in this health district, 26 pertain to the municipality of Sirriaya.

Lucena, which has the best water supply and with 11,930 population, has only 23 Antipolo systems and 27 septic tanks in private houses. This fact means without doubt that the municipal ordinance with regard to this matter is not enforced.

MISCELLANEOUS.

The provincial laboratory examined 881 specimens and was a great help in the work done for the eradication of epidemics.

Only one sanitary concrete market was built during the year with water supply corresponding to the municipality of Lopez. Public markets are maintained in good sanitary condition and have regulations for the handling of food.

In the celebration of garden days the sanitary personnel of the province gave lectures pertaining to sanitary matters as well as exhibitions and baby contests.

The clean-up week was also celebrated with success.

The structural work for the establishment of a sanatorium in the municipality of Malbog has already been begun.

TWENTY-SECOND HEALTH DISTRICT, PROVINCE OF MINDORO.

(Assistant Surgeon LUIS B. GOMEZ, M. D., *District Health Officer.*)

ORGANIZATION.

No changes have been made in the sanitary organization of this health district during the year.

The means of communication as well as for transmission of information are very deficient in this health district. There are several municipalities

and barrios which have no other means of communication than small craft which takes more than one month to cover the distance between said places and the office of the district health officer.

FINANCIAL STATEMENT.

This health district is so poor in resources that each year it receives aid from the Insular Government.

Four thousands eight hundred twenty pesos was the sum contributed by the Insular Government to this health district for 1919 which was expended in salaries of the personnel and their traveling expenses.

The municipalities of this health district contributed ₱3,750.90 and an equal sum was contributed by the province, making a total of ₱7,501.80 as local contribution which represents a contribution of ₱0.10 per capita, considering that the population of this health district is 73,822.

VITAL STATISTICS.

The number of deaths registered during the present year was larger than the number of births, resulting in a decrease of the population.

The infant mortality registered was lower than that registered in the preceding year, due, according to the district health officer's statement, to the infant campaign undertaken by the women's club and puericulture center towards the education and proper care of children.

The birth rate was lower than that registered in 1918. The district health officer explains this as due to the fact that probably many births registered were not yet reported at the end of the year.

MOST COMMON DIAGNOSES USED.

Convulsions, simple meningitis, congenital debility, beriberi, diarrhoea and enteritis, acute bronchitis, and broncho-pneumonia have been the diseases reported during the year with the greatest number of cases.

Malaria also increased, due, according to the district health officer's statement, to the breaking up of new ground for cultivation which made the mosquito breeding places more numerous.

COMMUNICABLE DISEASES.

Tuberculosis.—The tuberculosis death rate remained practically invariable in the present year if compared with the rates of the previous years.

Typhoid fever.—An outbreak of typhoid fever was registered in a barrio of the municipality of Looc, due to the infection of a dug well, which was infected by the pollution from a case registered. The water of this well spread the infection to other persons.

Smallpox.—An outbreak of smallpox occurred in Mindoro Province but not in epidemic form. Sporadic cases were registered in several municipalities, of which the most severely infected was Calapan, the capital of the province.

Three hundred three cases and 43 deaths were registered, which gave a morbidity rate of 549 per 100,000 population and a fatality rate of 14.10 per cent.

Cholera.—Cholera appeared in this health district in the month of April in the municipality of Looc. The first case is presumed to have proceeded from the barrio of Bulacan, which barrio is a long distance from the center of the municipality.

It is not possible to establish the source of contamination of this barrio because the persons in whom the first cases were registered had not been in other places. The people said that this disease appears periodically

every year in this barrio with little or no mortality, but in the present year the infection acquired great increase due to the infection of the one superficial insanitary well which is the only water supply for the inhabitants of said barrio.

From this point the infection spread to other municipalities, the number of municipalities infected reaching a total of four, in which is included the capital of the province.

Five hundred sixty-two cases with 266 deaths were registered in this province, giving a morbidity rate of 1,018 per 100,000 population and a fatality rate of 47.4 per cent.

Dysentery.—A dysentery epidemic was registered since the month of January, infecting all the municipalities of the province and giving a morbidity rate of 435 per 100,000 population and a fatality rate of 70 per cent. There were many more cases, indubitably not reported, if we consider the high fatality registered.

Influenza.—Influenza continued during the period of from January to July, with a few cases in October, and with the same mortality rate as that registered during the previous year.

Routinary sanitary measures were taken to check the epidemics, but in addition to this, the superintendent of public schools of Mindoro issued a circular to all the teachers in the province directing them to place themselves under the orders of the health officers to assist them in checking and bringing the epidemics under control, which, by their aid, was much more easily accomplished.

Leprosy.—Seven lepers were captured, of whom two died in the detention house, due to the advanced stage of the disease and the other five escaped from the detention houses due to the negligence of the guards.

VACCINATION.

In four municipalities of this province no vaccinations were performed because the vaccine virus, due to the scarce transportation means, remoteness of these municipalities, and great length of time required to reach these municipalities, would spoil before it could reach these places. Forty per cent of the total population of this health district was vaccinated, of which 18 per cent resulted positive.

MEDICAL RELIEF.

Two public dispensaries were closed during the year. Seven municipalities are still without medical attendance due to lack of funds. The woman's clubs and puericulture centers did much more work towards the reduction of infant mortality than in previous years, but the district nurse did not work in this connection, as noted in Table Q.

MEDICAL INSPECTION OF SCHOOLS.

Not much work has been done in this connection during the year, due to lack of physicians and sanitary personnel in the province. The schools inspected were found, generally speaking, in good sanitary condition and the prevalent affections existing among the pupils were scabies and dental caries.

WATER SUPPLIES.

Only two artesian wells were drilled during the year, and both in the same municipality. There were 81 new superficial wells dug during the year which do not furnish safe water.

In the municipality of Abra de Ilog the work of a gravity system of water supply has already begun and will be finished next year.

DISPOSAL OF EXCRETA.

Four municipalities have passed municipal ordinances enforcing the installation of closet of the Antipolo system for the disposal of excreta, but in the rest of the municipalities the ordinance was not considered. For this reason only 20 per cent of the total population of this province use a sanitary method for the disposal of excreta.

MISCELLANEOUS.

Considering the large number of deaths registered from malaria and other diseases easily diagnosed in the public laboratory, the work done during the present year by the laboratory of this province was very little.

TWENTY-THIRD HEALTH DISTRICT,
PROVINCE OF AMBOS CAMARINES.

(Dr. A. F. HERNANDEZ, *Acting District Health Officer.*)

ORGANIZATION.

The acting district health officer of this health district has not submitted explanatory notes referring to his health district.

During the year three health officers were successively assigned to this health district as district health officer. The first was Medical Inspector Gavino Vinluan, who was relieved on August 31 by Senior Surgeon Marcelino Asuzano, who resigned on December 10, assigning then as acting district health officer the president of the second sanitary division, Dr. A. F. Hernandez.

This health district was organized into six sanitary divisions, effective January 1, of this year, in which are embraced 23 municipalities. Formerly it was organized into three municipal boards of health attended by three doctors, two nurses and three sanitary inspectors, and with the new organization the district is attended by six doctors, four nurses, and twenty seven sanitary inspectors.

FINANCIAL STATEMENT.

Fourteen thousand thirty-eight pesos and seventeen centavos was appropriated by the municipalities for sanitary purposes in the district and an equal sum was appropriated by the province, making a total of ₱28,076.34 available for health purposes for the year 1919, giving a rate of ten centavos per capita, basing this estimate upon the population of 271,347 as reported in the last official census.

VITAL STATISTICS.

The general death rate was higher than that of the past year due to epidemics of cholera, dysentery, and smallpox registered in this health district, and as the number of deaths exceeds that of births, this district lost in population during the year.

Due also to the aforementioned causes, the infant mortality rate was very high and higher than in the previous years.

The facts noted in other health districts with regard to causes of death are also true in this health district. Tabulation F shows an increase in deaths from convulsions, congenital debility, beriberi in infants, diarrhoea and enteritis, acute bronchitis, and malaria, and as Table C shows that 92 per cent of the people died without medical attendance, it is not surprising to suppose that many of these deaths caused by the epidemics were registered as having died from these diseases.

Malaria.—Malaria is still prevalent in this district as well as in others, due to lack of sufficient funds appropriated by the municipalities to carry out the permanent structural work necessary to fill or drain the mosquito breeding places.

COMMUNICABLE DISEASES.

Communicable diseases helped to swell the death rate of this health district, the first being tuberculosis and then smallpox, cholera, dysentery and influenza.

Tuberculosis.—The increase in tuberculosis was almost double that registered in the past year. This could be explained if we admit that many of the deaths reported as tuberculosis will be considered as deaths from other causes.

Cholera.—Cholera began in the month of July and probably the infection was brought from the Province of Tayabas. Besides the routinary measures taken for eradicating this disease, three emergency hospitals were established and the epidemic was considered under control in December.

Smallpox.—Smallpox, which registered only seven deaths in the month of December of 1918, reappeared in January of the present year with 15 deaths, continuing its increase until October, when the disease began to decline. Two emergency hospitals were established for the treatment of patients but only 112 were hospitalized.

Dysentery.—Dysentery developed, together with cholera and in view of the fact that no bacteriological examinations have been performed to make a definite differentiation between those two diseases, perhaps some cases of cholera or coleriform dysentery have been diagnosed indistinctly as cholera or dysentery. Therefore statistics on this point should not be given credit.

Influenza.—Influenza continued until March causing in three months 324 deaths.

Rabies.—Five persons were bitten by suspected rabid dogs and two died. No antirabic serum was administered because the persons bitten were not reported to the sanitary authorities.

Leprosy.—Twenty-seven lepers were collected of whom one died in the detention house, four escaped from said house and 22 were sent to the Culion Leper Colony.

VACCINATION.

If the number of vaccinations performed corresponds to one vaccination in each person, it may be said that the whole population of this health district has been vaccinated during the year, as may be noted in Table K, but due to the prevalence of smallpox in the province at the end of the present year, it may be deduced that besides the persons vaccinated with negative results, many persons have been vaccinated more than once.

Vaccination was performed by the sanitary personnel of the province and also by thirty Insular vaccinators assigned to this health district as an aid.

LABORATORY.

There is a provincial laboratory in connection with the provincial hospital, established not only for hospital diagnoses, but also for the detection of the first cases of suspected communicable diseases. Only six specimens of feces were examined. If this is compared with the number of deaths registered from dysentery and cholera, it appears that very poor aid has been given by the provincial laboratory to the detection of cases of said diseases.

MEDICAL RELIEF.

Ten public dispensaries were opened during the year, but six were closed due to lack of funds for maintenance of same.

Seven women's clubs were newly organized in connection with infant welfare and one baby contest was held in Naga.

The nurses of this health district spent all their time this year in attending cases of smallpox and cholera and no attention has been given to infant work and to pregnant women. Only four normal deliveries were attended.

MEDICAL INSPECTION OF SCHOOLS.

With regard to this point the readers are referred to tabulation "R" and "S" of this report.

MISCELLANEOUS.

No explanatory report has been submitted by District Health Officers of this district with reference to the other activities as has been done by the district health officers of the other health districts.

TWENTY-FOURTH HEALTH DISTRICT,
PROVINCE OF ALBAY AND SUBPROVINCE OF CATANDUANES.

(Senior Surgeon SHANNON RICHMOND, M. D., *District Health Officer.*)

ORGANIZATION.

No changes have been made in the organization of this health district, which remains with the same organization as that of seven years ago. About forty temporary employees were employed as sanitary inspectors and vaccinators from time to time in connection with the cholera and smallpox epidemics.

FINANCIAL STATEMENT.

Practically all the municipalities comprised by this health district as well as the province gave the maximum rate of contribution provided by law.

Twenty thousand three hundred thirty-six pesos and eighty-eight centavos was the balance remaining in the health fund of this health district at the end of 1918, and as a sum of ₱21,549.08 was appropriated from the municipal funds and ₱28,549.99 from the provincial funds, the total appropriations for 1919 amounted to ₱50,099.07, which together with the balance remaining at the end of the year, gave a grand total of ₱70,435.85 available for sanitary purposes in the 24th health district.

The above amount has been expended in maintaining the provincial and smallpox hospitals, in the purchase of drugs, medical supplies and disinfectants and in paying the salaries, traveling expenses, etc., of the sanitary personnel.

Out of the total contributions, excluding the balance, the sum of ₱43,111.03 corresponds to the municipal and provincial contributions of the Province of Albay and ₱6,988.04 to those of the Subprovince of Catanduanes, and as the former has a population of 258,770 and the latter 62,975, according to the last official census, the contribution per capita of Albay to the health fund for the year 1919 was ₱0.17, and of Catanduanes ₱0.12.

VITAL STATISTICS.

The death rate in this health district has been very high owing to the outbreaks of smallpox, cholera and indirectly to the severe epidemic of influenza which prostrated the people of this health district during November and December of the year 1918

Infant mortality increased also as compared with that registered in previous years which was due to the toll paid by infants under one year of age to smallpox.

It will be noted in Table G that the deaths attributed to convulsions in infants, simple meningitis, congenital debility, and diarrhœa and enteritis in children under two years of age, have increased as compared with those registered in the years 1916 and 1917. The above causes of death are registered principally among infants under one year, and as the three first mentioned being only symptoms and not specific diseases, it is to be concluded that many cases of smallpox and cholera have been diagnosed as such diseases, and therefore the high rate of infant mortality is indubitably due to the said epidemics.

The birth and marriage rates did not show sensible variations as compared with same rates in previous years.

One thousand four hundred five deaths have been registered from malaria during the year which are more than double those registered in the past year. This fact has no other explanation than that surely many deaths reported as from malaria were due to cholera, smallpox, or influenza, the latter being prevalent in this health district during the first quarter of the present year.

COMMUNICABLE DISEASES.

Cholera.—Cholera appeared in the province in September, and threatened to assume very alarming proportions during October and November. The infection was introduced from the adjoining Province of Ambos Camarines. The number of deaths from dysentery registered in the present year tallies with that registered in 1916, in which year 633 deaths from cholera were also registered. This means that probably many cases of cholera have been reported as dysentery which appeared in the province since January.

Typhoid fever.—Deaths from typhoid fever and tuberculosis were registered in greater number than those in the past year, and having noted the fact that an epidemic of some kind has always occurred in some health district, it may be seen then, as 90 per cent of the inhabitants of any community in the Philippines died without medical attendance, that many deaths attributed to said disease in reality are due to the prevailing outbreak of epidemic.

Influenza.—Influenza prevailed during January and February, but practically disappeared during March.

Smallpox.—Smallpox appeared in February, although in January one death from said disease was registered in the municipality of Albay. Beginning from February, the number of deaths kept increasing, arriving at its climax in the month of November with 262 deaths. Children below school age were particularly affected by smallpox.

Rabies.—Five deaths occurred from rabies. Absolutely nothing has been done by the municipalities in the way of muzzling dogs which have greatly increased in number during the past three years when 36,000 canines were poisoned.

Leprosy.—Although a large number of lepers had already been sent to Culion from this health district in times past, yet it is not free of them and forty were ready at the end of the year to be sent to Culion Leper Colony.

The usual measures were very strictly enforced to control epidemics. Two emergency smallpox hospitals were established, one in Guinobatan

and the other as a part of the provincial hospital to which were brought the patients from neighboring towns. The former was opened in March and closed in July. Three hundred twenty-four patients were treated in this hospital, 215 of whom were under 8 years of age, 91 from 9 to 15 and 18 over 16 years of age. The ward for smallpox in the provincial hospital was opened in February and closed in July, during which time 743 patients were treated of whom 512 were under 8 years, 129 from 9 to 15 and 102 over 16.

The epidemic was promptly eradicated by hospitalization, despite the fact that the people are opposed to such a measure and a great deal of difficulty was encountered in getting the patients to the hospital.

VACCINATION.

The number of vaccinations performed in this health district during the year was more than its population. For years the sanitary personnel vaccinated many thousands of people amongst those living in towns and accessible barrios, leaving those living out in the hills among whom most cases of the disease occurred.

MEDICAL RELIEF.

No new dispensaries were opened during the year, and very little was done in the way of organizing women's clubs or other institutions having for their purpose the infant welfare or lowering of infant mortality on account of the campaign against epidemics, while the nurses and midwives employed by the province continued to spread the usual instructions given in the past year.

MEDICAL INSPECTION OF SCHOOLS.

Practically every school in the province was inspected at least once, and generally speaking, were found in a satisfactory condition, excepting the fact that most of them have no toilet facilities. Nearly all of them were formerly provided with Antipolo systems, but they were destroyed by typhoons and have not been rebuilt.

The examinations show that a very large proportion of children suffer from dental caries, for which reason sometime ago the provincial board of Albay passed a resolution providing for the employment of a dentist to visit the schools and care for the teeth of the pupils. This was done for a couple of months, but the dentist having resigned no other dentist could be found to take the position and the work was necessarily dropped.

WATER SUPPLY.

No artesian wells were drilled because the province is not provided with a drilling outfit. However, a long felt want was filled when Legaspi was supplied with excellent drinking water which is piped down from a spring at the old military reservation. There are four faucets which deliver about twenty-five gallons per minute. Drinking water for this town was formerly carried in carts and by men from springs two miles distant.

DISPOSAL OF EXCRETA.

As all the attention of the sanitary personnel during the year was devoted to fighting epidemics, the Antipolo system drive inaugurated in the past year was discontinued and only a few closets were built, although in November a circular was sent out notifying that the campaign would be started again.

The towns of the Subprovince of Catanduanes are the only ones which have not passed an ordinance for the disposal of excreta.

Nearly all toilets in this health district were constructed of bamboo, the hollowed out (and burned out) trunks of coconut or other palm trees, making an excellent "pipe." These trunks ready for installation were sold for one peso and a half each. A complete closet costs from three to seven pesos.

MISCELLANEOUS.

Practically no new sanitary ordinances were passed. Three thousand sanitary orders were issued, but few prosecutions were required. By citing a fact, very little trouble is encountered in getting the people to comply with sanitary orders.

As to publicity, the entire Province of Albay is under deep obligation to the governor, Honorable José O. Vera, one of whose first acts, after his government was inaugurated, was to start a series of nightly meetings in the municipalities in which he himself and one health officer explained personally matters pertaining to public health. Ordinarily an audience of from one to three thousand people was present at each meeting. These meetings were held for nine consecutive evenings and were of great value in wiping out the epidemic of cholera.

Over 18,000 home gardens were planted during the year.

During the clean-up week, the weather was very bad. Notwithstanding this fact, a great deal of cleaning up was done. The prize of one hundred pesos offered was awarded to the intermediate school of Ligao.

TWENTY-FIFTH HEALTH DISTRICT, PROVINCE OF SORSOGON AND SUBPROVINCE OF MASBATE.

(Assistant Surgeon JOSÉ J. ARÉVALO, M. D., *District Health Officer.*)

ORGANIZATION.

This health district is composed of the main Province of Sorsogon and the Subprovince of Masbate, which is also composed of three islands, Ticao, Burias, and Masbate.

This health district was organized into sanitary divisions in 1918.

Dr. Arévalo took charge of this health district in October, relieving Senior Surgeon Juan S. Fernando.

The question of lack of either proper land or water transportation is of course the cause of the delay in obtaining information regarding sanitation and making the desired improvements in sanitation of this health district.

FINANCIAL STATEMENT.

The municipalities of this health district contributed the sum of ₱12,982.65 to the health fund of the province while the province contributed only ₱2,209.67, making a total of ₱15,192.32 as general contribution.

As the population of this health district is 245,696, including the population of the Subprovince of Masbate, the per capita contribution of the inhabitants of this province to the health fund is ₱0.06.

The overdraft incurred by this health district in the year 1919 was due to the failure on the part of the province in not contributing its share to the health fund, an amount equal to that contributed by the munici-

palities as provided by the Administrative Code and therefore no permanent sanitary improvements could be expected unless the provincial board appropriated more funds for such purpose.

VITAL STATISTICS.

The statistics collected are deficient due to the fact that registration of deaths and especially births is not strictly reported due to the difficulties of transportation in this health district.

The number of deaths in 1919 was larger than that of births due to the cholera, smallpox, dysentery, and typhoid fever epidemics.

The high infant mortality rate registered was due principally to smallpox and dysentery epidemics although a number of these cases has been diagnosed as diarrrhœa and enteritis.

The number of deaths reported as occurring from convulsions, congenital debility, diarrrhœa and enteritis, and malaria has only one fallacy in the diagnosis made by municipal secretaries, that of reporting deaths from communicable diseases as due to one of the above diseases in order to conceal cases of communicable diseases and avoid the proper enforcement of sanitary measures. More than 70 per cent of these reported deaths should be counted among dysentery, cholera, typhoid fever, and smallpox.

COMMUNICABLE DISEASES.

Cholera.—Cholera has not disappeared from this health district during the period of years covered by statistics inserted in this annual report. This province therefore may be considered as a permanent focus of cholera.

Cholera reappeared in the month of August in the municipality of Masbate during the present year.

In the Province of Sorsogon the municipality of Magallanes registered the first cases and from this, the disease gradually spread to other towns.

In Casiguran an emergency hospital was established and supported by provincial funds, and Dr. Vicente de Jesus y Zabala, president of the third sanitary division, was in charge of this hospital with the coöperation of the district health officer.

Thirty-eight of the 53 cases registered in Casiguran were hospitalized, with a fatality rate of 46 per cent while in cases not hospitalized the fatality rate was 69 per cent.

No difficulties or obstacles of any kind were encountered on the part of the public in the hospitalization, but on the contrary patients requested their admission to the hospital. Of the course, the establishment of the hospital was successful, and the number of cases decreased rapidly which is a certain proof that contacts are the causes which play the principal part in the propagation of this epidemic.

Smallpox.—The smallpox epidemic was an aggravation of the epidemic which began in 1918. It was propagated in the majority of the municipalities, making a total of 5,627 cases with 2,380 deaths.

The outbreak of said disease in this province and its spread are of course due to deficient vaccination performed during the previous years, but by the systematic and proper vaccination carried out by the district health officer, together with the Insular vaccinators sent from the Central Office and the 24,000 units of vaccine virus used every month, the epidemic was considered as controlled in December, notwithstanding that at the close of the year three municipalities remained infected.

Dysentery, typhoid fever.—Dysentery and typhoid fever also took place as epidemics in this health district, the former causing 6.89 per cent of the total deaths while the latter is 1.49 per cent.

No special measures, but the routinary ones, were taken for the control of these epidemics.

Malaria.—Malaria registered a high rate of mortality in this province. A total of 14.79 per cent of the total mortality was attributed to malaria.

The prevalence of this disease was due to the numerous ponds of stagnant water which constitute breeding places for mosquitoes and the poverty as well as inability of the municipalities to undertake improvement work.

In September, 1919, the Central Office sent a medical commission composed of Senior Surgeon Catalino Gavino and Bacteriologist Fajardo to investigate the high mortality reported in the municipality of Bulan in which about 30 to 40 deaths in a population of 19,000 were registered every week. The commission reported that the cause of said high rate of mortality was due to a pernicious form of malaria.

An intensive campaign of quininification among the people as well as the destruction and petrolization of places where mosquitoes were found resulted in the extinction of this type of malaria.

Tuberculosis.—With reference to tuberculosis, the same statement made by district health officers of other health districts may also be applied to this health district.

Rabies.—There were in all five deaths caused by the bites of rabid dogs and undoubtedly more persons had been bitten, but recovered due to the Pasteur treatment.

Sanitary ordinances regarding the muzzling of dogs exist in most municipalities, but not enforced by the municipal authorities.

Leprosy.—Seven lepers were captured during the year and sent to Culion.

VACCINATION.

Systematic vaccination was successfully performed in this province by Insular vaccinators. Said vaccination was commenced in the month of February and carried on throughout the year 1919 with a total vaccination as noted in Table L.

MEDICAL RELIEF.

Due to lack of funds for the purchase of medicines no public dispensaries have been established within this province during the year. The district health officer since he assumed charge of this health district in October has inaugurated a general dispensary in his office for indigent persons and emergency cases.

There is no organization duly established for infant welfare in this health district. The woman's club already organized exists only in name and no work has been done during the year with regard to the reduction of the high infant mortality rate.

INSPECTION OF SCHOOLS.

Due to the work in the epidemic campaign and also the limited personnel only 39 schools were inspected during the year. The schools were found in a good sanitary condition and some of them have closets of the Antipolo system and septic tanks for disposal of excreta.

WATER SUPPLIES.

Three more new artesian wells were drilled in the municipality of Sorsogon, making a total of 30 existing in this health district.

Generally the inhabitants of Sorsogon, due to difficulty in obtaining safe water, used rain water and unsafe springs for drinking purposes.

In Bulusan there is a water service by means of pipes made of bamboo through which the water is conducted from Maglaon Mountain.

The municipality of Bacon inaugurated in the month of December, 1919, the modern water gravity system. This is the only municipality within the province having voted the sum of ₱7,000 for such purpose and secured by this means the ₱14,000 allotment from Insular funds.

DISPOSAL OF EXCRETA.

The ordinance adopting the Antipolo system for disposal of excreta has been submitted to all municipalities, but same was not enforced, alleging as reasons the high cost of materials needed for said system, although according to the district health officer the local cost of this kind of closet is from ₱5 to ₱10.

The municipality of Juban ranks first in the number of Antipolo systems and water closets established within its jurisdiction.

MISCELLANEOUS.

There is in this health district laboratory equipment but which is not all used due to lack of funds. However, routinary examinations were performed.

Several public conferences during the cholera and other epidemics were given by the district health officer and presidents of sanitary divisions regarding the methods and precautions that should be taken by the people to avoid the spreading and contracting of said diseases.

Clean-up week was carried out with success and is considered by the district health officer as a good means of encouraging cleanliness in the municipalities.

TWENTY-SIXTH HEALTH DISTRICT,
PROVINCE OF ROMBLON.

Surgeon PEDRO BUENASEDA, M. D., *District Health Officer.*)

ORGANIZATION.

The organization of this province is in the same status as in 1918.

This province is the only one remaining not organized into sanitary divisions.

Such organization has been recommended several times, but the provincial board always stated that there were not sufficient revenues in the province to support such kind of organization.

Therefore this province has been organized into municipal boards of health and the sanitary personnel in the whole province is that noted in Table A.

FINANCIAL STATEMENT.

Only ₱2,569 has been appropriated by the province for sanitary purposes during the year 1919, which gives a per capita rate of ₱0.04, considering that 64,576 is the population of this province according to the last official census for 1918.

VITAL STATISTICS.

Practically all deaths in this province during 1919 were not attended by qualified physicians, as the district health officer is the only person having such qualifications. The remedy for these sorrowful deaths is to provide this health district with more physicians since it is not strange to say that even with a salary of ₱200 per month, it is hard to find physicians for these lonesome islands, especially when lack of transportation facilities is taken into account.

Due to scarcity of sanitary personnel in this province no efficient measures could be taken to control epidemics of dysentery and smallpox registered during the year as well as to reduce the rate of infant mortality and the death rate from malaria and tuberculosis.

It is not possible to make efficient campaigns against communicable and preventable diseases and to introduce sanitary improvements unless more liberal appropriations are made by the province and municipalities.

VACCINATION.

Practically all the population of this province was vaccinated by a party of twenty vaccinators assigned to this province by the Central Office, because the request of the district health officer on the provincial board to appropriate funds for the payment of vaccinators and the purchase of medicines to attend the patients suffering from smallpox was denied due to lack of funds.

MEDICAL RELIEF.

Inefficient medical relief was afforded in this province to charity patients, except consultation and emergency treatment within the limited scope of the efforts of the district health officer, and due to lack of money the province was unable to purchase medicines and medical and surgical equipment. Also no work has been done to reduce infant mortality for the reasons above stated.

The puericulture center and *gota de leche* established in Romblon have been in operation only during six months on account of the resignation of the nurse in charge of this institution.

WATER SUPPLY.

Gravity water supply in the municipality of Romblon is the only one satisfactory in this province, but in the dry season there is a shortage of water and the people are compelled to get their drinking water from unsafe surface wells.

DISPOSAL OF EXCRETA.

There are only very few closets of the Antipolo system type in the municipality of Romblon, while in other municipalities no sanitary methods are established for disposal of excreta.

MISCELLANEOUS.

There are no sanitary markets or slaughterhouses in this province and no improvements were made during the year from a sanitary standpoint.

TWENTY-SEVENTH HEALTH DISTRICT,
PROVINCE OF SAMAR.

(Surgeon ANATOLIO DASMARIÑAS, M. D., *District Health Officer.*)

ORGANIZATION.

This province was organized into sanitary divisions only since January of the present year.

This province has been divided into twelve sanitary divisions, four of which are occupied by qualified doctors, two by graduate nurses, and four by persons who have training and experience in sanitary matters. Two divisions remain vacant due to lack of applicants.

One more clerk was added to the clerical force and to each of the 37 municipalities comprising this province is assigned one sanitary inspector.

FINANCIAL STATEMENT.

The municipal appropriations as contribution to the health fund of the province for the year 1919 amounted to ₱21,055.20, and the sum appropriated by the province was ₱6,000, making a total ₱27,055.20, which gives a per capita rate of ₱0.07 considering that according to the last official census 380,211 is the population of this province.

Of the sum appropriated, a balance of ₱10,410.50 remained at the end of the year due to the very small sum expended for medicines which appear to be insufficient for attending the indigent patients in the whole province and to the fact that most of the positions as presidents of sanitary divisions and sanitary inspectors remained vacant for several months owing to lack of applicants.

Catbalogan requested a loan of ₱20,000 for the purpose of establishing a sanitary water supply system, but no action has yet been taken up to the end of the present year.

VITAL STATISTICS.

The increase of mortality in this province in the present year over that of the last year in spite of the influenza epidemic registered in 1918, was due to the epidemics of smallpox and dysentery.

The same statement may be made in relation to the increase in the infant mortality rate.

The deaths attributed to simple meningitis, congenital debility, beriberi, diarrhoea and enteritis, acute bronchitis, broncho-pneumonia, and even cancer are too high, if compared with those reported as such in 1918. Especially deaths diagnosed as cancer, beriberi, diarrhoea and enteritis in 1919 are more than double those diagnosed as such in 1918.

The only explanation that could be given as to this matter is that no care has been taken by the sanitary personnel in this province with regard to making true diagnoses, and in order that very few deaths from communicable diseases might appear to have been registered, many of them were diagnosed as common diseases without considering the fact that they were artificially creating epidemics attributed to diseases not considered as epidemical.

Similar reasons could be given as to the data furnished by the district health officers with regard to communicable diseases.

It is sufficient to read such data in Table H in order to deduce that same has been carefully prepared to show that no epidemic other than smallpox invaded the province making great havoc, but the crude death

rate is not susceptible of such misconception, and the high mortality rate that resulted shows that more than one epidemic has invaded the province, but has not been reported.

Smallpox.—The epidemic of smallpox was the continuation of that of 1918. The towns located in the east coast of the Island of Samar were the ones most afflicted by the epidemic due to the fact that the epidemic acquired its highest virulence during the months of August to October when communications in this region are impassable due to strong monsoons which prevented the sending in time of vaccine virus, material and personnel needed to check the epidemic as well as to put the towns isolated from one another in communication.

Twenty-three emergency hospitals and isolation houses were established to attend patients and to reduce the foci of infection. In the isolation houses and emergency hospitals 1,345 cases were treated among whom 252 deaths were registered.

Leprosy.—Twenty-nine lepers were captured and sent to Culion. More lepers are scattered throughout the province and a drive for collecting all of them has been undertaken, but the difficulty of communication makes this work hard, if not very slow.

VACCINATION.

A party of twenty vaccinators with a doctor as chief was sent to this province in the month of May.

This party was instructed to make a systematic vaccination, town by town, while the sanitary personnel of the province performed the vaccination in contacts of smallpox cases.

Oftentimes due to the long period between the date of shipping vaccine virus from Manila and the date of its arrival in places where it was to be used, the virus became useless. Dry powder vaccine is now prepared and used in these remote places.

Of the 180,523 vaccinations performed, 84,562 were made by the sanitary personnel of the province and the rest by the vaccinating party.

MEDICAL RELIEF.

Seven new public dispensaries were opened during the year 1919, making a total of twelve in operation at the end of the year but very few patients were attended in these dispensaries, probably due to the fact that the doctors who attended the dispensaries were engaged in checking the smallpox epidemic.

With regard to infant welfare the puericulture center of Guiuan has an appropriation to secure the services of a graduate female nurse at a salary of ₱80 per month, ₱15 for lodging, and ₱20 for traveling expenses in barrios but no one applied for this position.

INSPECTION OF SCHOOLS.

The 83 public schools inspected were found in good sanitary condition, of which 63 have adopted the Antipolo system for disposal of excreta.

The most common affections found among students were dental caries and contagious diseases.

WATER SUPPLIES.

Only one artesian well was drilled during the year. This province has several springs which, when conveniently repaired at a little cost, will be a safe and good source of water supply, but due to the idleness of the municipal councils, or perhaps due to lack of funds, those springs at present used by the people furnish unsafe drinking water.

In the municipality of Sulat the military government bestowed upon the municipality a perfect and complete safe water system, using a good spring and distributing the water to houses thru pipe and establishing hydrants on the crossings of streets, but this system is actually nearly destroyed due to carelessness of the municipal authorities.

As only five artesian wells are at present existing in this province of 380,000 population, it may be assumed that the people do not use safe water.

In Laoang, Calbayog and Guiuan big tanks have been constructed for the collection of rain water which is furnished to the people in the dry season.

DISPOSAL OF EXCRETA.

To all of the municipal councils of this province was submitted the so-called "Antipolo system" ordinance for disposal of excreta, but none of them took favorable action.

A letter was sent to the provincial board suggesting that said ordinance be passed by the municipal councils, but the same result as above-mentioned was obtained.

For this reason only very few closets of the Antipolo system were established, but only in private residences.

MISCELLANEOUS.

The majority of public markets in this province are constructed with light materials and are not maintained in good sanitary condition.

TWENTY-EIGHTH HEALTH DISTRICT, PROVINCE OF LEYTE.

(Medical Inspector JOSE GUIDOTE, M. D., *District Health Officer.*)

ORGANIZATION.

The number of doctors assigned as presidents of sanitary divisions during the year 1919 were less than in 1918, due to the fact that two resigned and that no applications were filed from which to fill the vacancies.

The increase in the sanitary personnel for 1919 consisted of five sanitary inspectors and two dispensary attendants.

FINANCIAL STATEMENT

The municipalities contributed ₱26,324.97 to the health fund of the province while the province contributed only ₱13,600, making a total appropriation of ₱39,924.97 or ₱0.07 per capita.

The appropriation for expenses in this health district for the present year was ₱54,291.50. This amount was intended to be spent only for the ordinary expenses of this health organization, but during the year there was undertaken an extensive campaign against smallpox in this province and the provincial board authorized the expenditure of the balance of 1918 for the purpose of carrying out said campaign.

An overdraft for ₱20,829.01 was charged against the health fund of the province to cover the expenses incurred in salaries of temporary sanitary inspectors and vaccinators, for the subsistence of persons hospitalized in the emergency hospitals established and for other expenses incurred in the campaign undertaken.

The municipality of Burauen has applied for a loan of ₱10,000 for the purpose of improving its municipal cemetery.

VITAL STATISTICS.

The high rate of mortality in the present year is due to the smallpox, influenza and dysentery epidemics.

The high rate of mortality among children from 0 to fifteen years is due to the smallpox epidemic.

The high rate of infant mortality is principally due, as the district health officer states, not only to the above-mentioned epidemics, but also to the improper care of infants by mothers among the poor people.

MOST COMMON DIAGNOSES USED.

Malaria.—Malaria is prevalent in this health district because, according to the statement of the district health officer, most of the municipalities are situated near the hills and mountains covered with forest where mosquitoes are favored to lay their eggs in the yards.

Beriberi.—Beriberi in adults decreased during the year, because, as the district health officer states, the shortage of and the continuous rise of the price of polished rice the people have adopted as their main foodstuff, corn, camotes, and unpolished rice, making their diet better and complete in vitamins. Infantile beriberi, being dependent upon beriberi in adults, has necessarily undergone a diminution.

COMMUNICABLE DISEASES.

Fifty-four per cent of the total mortality in this health district was due to avoidable diseases. The death rate in this province has increased since 1916 and over that of the year 1918 in which influenza caused 1,101 deaths.

The diseases which caused the largest number of deaths follow in the order of their importance: Smallpox, tuberculosis, influenza, and dysentery. One hundred seventeen deaths were registered from hookworm, but it is believed that this diagnosis is erroneous.

Smallpox.—The smallpox epidemic was a prolongation of that of the year 1918.

All the municipalities were infected and its morbidity rate (1,847 per 100,000 population) shows the seriousness of this epidemic. The fatality rate was 26.7 per cent among cases hospitalized and 67.6 among cases not hospitalized.

One hundred twenty-one emergency hospitals and isolation houses were established in all of which were hospitalized 3,124 patients.

Cholera.—Only one municipality reported suspected cases of cholera and during the month of August registered 41 cases and 18 deaths. Not all feces of patients were bacteriologically examined and therefore the diagnoses of these cases were only clinical, but the failure of the disease to spread to the neighboring towns and the rapidity of eradication of the outbreak permit a doubt as to the veracity of the diagnoses.

All cases were strictly hospitalized and the routine sanitary measures against cholera were taken.

Dysentery.—Cases of dysentery of sporadic character were registered in some municipalities. The morbidity rate was 61 per 100,000 population, with 82 per cent fatality. This high rate of mortality is not real and is due to the fact that many of the cases were not known until after death.

Influenza.—The last epidemic of influenza continued for the first four months and at the end of May was considered as controlled. Five hundred and twelve known cases with 328 deaths was the toll paid by the population of this health district to said disease.

Tuberculosis.—Tuberculosis remained at the same incidence as that of the previous year, due to the fact that no real measures were taken against this disease.

Rabies.—Only two cases of rabies were registered, both in the same

municipality. Ordinances regarding the muzzling of dogs and the killing of stray unmuzzled dogs were passed in many municipalities but not enforced.

Leprosy.—In regard to leprosy, every possible measure is being taken toward the segregation of all lepers scattered throughout this health district. Most of the cases are refugees from Cebu. The cause of the prevalence of this disease is due to the fact that the simple people do not believe in the communicable nature of this disease and therefore no precautions are taken by them to prevent infection, and also to the fact that this province is the refuge of lepers threatened with prosecution or capture in Cebu province.

Thirteen lepers were captured, one of whom died in the detention house, five escaped from the detention house and the rest were sent to the Culion Lepers Colony.

VACCINATION.

One vaccinating party, composed of 20 vaccinators and one doctor as chief, besides fifty more provincial and municipal vaccinators, was the force engaged in the intensive vaccinating campaign carried out throughout the whole health district for the control of the smallpox epidemic. Seven hundred and eighty-two thousand vaccinations were performed which is approximately one and one half times the population of this province.

"It is impossible to state," said the district health officer, "the exact percentage of positives among the group of ages from 0 to 10 years of age. However, I venture to give an approximate estimate of 75 per cent."

MEDICAL RELIEF.

One more public dispensary was opened in Caburian and 121 emergency hospitals and isolation houses were maintained during the epidemic in this health district.

With regard to infant welfare in this health district, there are organized two women's clubs and three puericulture centers, but all of them have not yet done anything toward the reduction of infant mortality on account of lack of available funds.

Presidents of sanitary divisions and the one single nurse appointed gave lectures to the mothers on the proper care of children.

MEDICAL INSPECTION OF SCHOOLS.

The schools inspected were found in good hygienic and sanitary condition.

Almost all the schools are provided with gardens and ample playgrounds adjoining the schools, but there was a general lack of sanitary methods of disposal of excreta.

WATER SUPPLIES.

In this health district only four municipalities have artesian wells. The rest of the municipalities have to depend upon their water supply from (1) superficial wells with fairly safe water; (2) superficial wells with unsafe water; (3) rain water, fairly safe; (4) spring water; (5) river water. Only 8 more artesian wells were drilled during the year, of which 7 were drilled in the municipality of Ormoc.

Only one drilling machine was available in the province. In some municipalities the perforation of artesian wells has proved a total failure, no water being found.

DISPOSAL OF EXCRETA.

To all the municipalities of this province there was submitted an ordinance for the installation of the Antipolo system for the disposal of excreta.

At present there are already 31 municipalities which passed the ordinance, but none of them have enforced its provisions. The rest of the municipalities laid the ordinance on the table indefinitely because of the high cost of the system, but the cost of an Antipolo closet is appreciated by the district health officer, same being only ₱15.

One thousand twenty-eight closets, classified as Antipolo and septic tank closets have been newly built during the year, but it may be supposed that most of these closets are protected pits only.

MISCELLANEOUS.

The provincial laboratory established in this province in 1918 has done more efficient and important work in aiding the provincial hospital than in sanitation, because outside of the examinations made of the patients in the hospital, only diagnoses of captured suspected lepers were made.

An assembly of the presidents of sanitary divisions was held at Ormoc in November to carry out a campaign for the purpose of increasing the allotments given by the municipalities to the health fund of the province and measures that should be taken toward the reduction of infant mortality.

TWENTY-NINTH HEALTH DISTRICT, PROVINCE OF CAPIZ.

(Surgeon JOSE VIDAL, M. D., *District Health Officer.*)

ORGANIZATION.

No changes have been made in this province in the organization during the year.

FINANCIAL STATEMENT.

No increase nor decrease has been made by the municipalities and province in their contribution to the health fund of the province. The municipalities appropriated ₱12,663.91 and the province ₱8,000, making a total of ₱20,663.91 for sanitary purposes, and as the population of this health district is 292,496 according to the last census for 1918, the contribution per capita is ₱0.07.

VITAL STATISTICS.

The death rate in 1919 remained higher than in 1917 due to the epidemic of smallpox registered in 1919. The same conclusion may be reached with respect to the rate of infant mortality.

Deaths under 30 days in 1919 are lower than those in 1918, but deaths from 30 days to under one year are higher than in 1918 on account of the smallpox epidemic in 1919. The causes of the prevalence of so high infant mortality in this health district are the same as those in others and this fact could not be corrected unless a uniform campaign throughout the Archipelago against these causes is instituted.

The prevalence of deaths from convulsions, simple meningitis, congenital debility, diarrhoea and enteritis over other causes and the high rate of death from these causes over the rate in the past year is due, according to the district health officer, to famine registered in the province in the present year.

COMMUNICABLE DISEASES.

Smallpox.—The smallpox epidemic was a continuation of that of the past year which had its climax in the month of July with 250 cases and 193 deaths. The rate of morbidity was 475 cases per 100,000 population with a

very high death rate (65 per cent). Most of the cases occurred in infants under seven years old and among those not attending school.

Cholera.—The epidemic of cholera of 1918 which was considered as controlled in January, 1919, appeared again in five municipalities during the period of from August to November causing 136 cases and 93 deaths, or a morbidity rate of 60 per 100,000 population and 68 per cent fatality. The high rate of fatality registered is due to the custom of the people of not calling a doctor unless the patients are in an agonic or preagonic period.

Dysentery.—Dysentery was registered since January with a morbidity rate higher than cholera. Probably many cases of cholera have been reported as dysentery, because the sanitary measures taken against cholera are more strict and annoying than the measures against dysentery and due to lack of sufficient sanitary personnel to detect cases.

Influenza.—Influenza brought over from the past year continued up to month of April, 1919, in which month the last case of the disease occurred.

One hundred seventy-six deaths have been reported from hookworm as against none in the previous year. This fact would appear indicative of occultations of real cases of cholera or dysentery, because it is not possible to admit scientifically so great a number of deaths from said cause.

Typhoid fever.—Typhoid fever is another cause of deaths which appeared with a higher rate of incidence than cholera and with the same incidence as in previous years.

Whooping cough.—Whooping cough also prevailed in this health district, but the district health officer has not given any explanation with reference to this matter.

Tuberculosis.—Deaths from tuberculosis remained at the same rate as that in previous years.

Rabies.—Three persons were bitten by suspected rabid dogs but they were saved by the Pasteur treatment.

Leprosy.—Great efforts were made in rounding up all lepers still at large in this health district. Twenty-four were captured and sent to the Culion Leper Colony. The prevalence of this disease is due to the fact that lepers live in the mountains with their families and it is very hard to capture them.

No special sanitary measures were taken for the eradication of epidemics in this health district.

VACCINATION.

The sanitary personnel of the province together with a party of 20 Insular vaccinators performed an extensive vaccination in the province, vaccinating approximately half of the population.

MEDICAL RELIEF.

Five new public dispensaries were opened during the year and one emergency hospital in Capiz was established during the epidemics.

Three new women's clubs were organized during the year which devoted part of their work to increasing food production and to infant mortality work by giving lectures to mothers during visiting hours.

The position of provincial midwife remained vacant during the year, and the work noted in Table "A" was performed by the district health officer and the presidents of sanitary divisions.

MEDICAL INSPECTION OF SCHOOLS.

Every school building in this health district has sanitary disposal of excreta and is maintained in an excellent sanitary condition.

WATER SUPPLIES.

There are three kinds of water used by the people in this health district, namely, water from artesian wells, water from dug wells, and rain water. Surface wells do not furnish safe drinking water and persons using same are invariably the first ones who contract cholera, dysentery and typhoid fever. In Capiz there is a tank of rain water from which the people obtain the necessary drinking water. Not even one artesian well was drilled during the year in this health district.

DISPOSAL OF EXCRETA.

All the municipalities of the province have passed ordinances enforcing the establishment of the Antipolo sewage system. 1,586 such closets were constructed during the year.

The materials used by poor people for the construction of this system were bamboo and trunks of buri palm, and others used wood, concrete or stone. The cost of a complete closet constructed of local materials is estimated at from ₱5.50 to ₱10.

MISCELLANEOUS.

In every municipality there is an ordinance for muzzling of dogs, and during the year 3,027 stray dogs were poisoned by strychnine.

Every municipality took part in the home garden contest and a prize was awarded to Malinao.

The prize of ₱100 in the clean-up week contest was awarded to the municipality of Capiz and the second to Ibayay. During the clean-up week many houses, yards and public buildings were cleaned and many Antipolo closets established.

 THIRTIETH HEALTH DISTRICT,
 PROVINCE OF ILOILO.

(Senior Medical Inspector ANDRÉS CATANJAL, M. D., *District Health Officer*.)

ORGANIZATION.

At the beginning of 1919, the number of municipalities of this province was increased from 28 to 31, by the addition of three newly organized municipalities. Subsequent to the creation of these new municipalities three more sanitary inspectors were appointed and one assigned to each. One president of sanitary division was also appointed to one of the five divisions remaining vacant at the end of 1918.

To secure prompt information regarding public health matters, calls, etc., the office of the district health officer and his residence are provided with telephone communication with all the municipalities of the province except two which are on the island of Guimaras, and with the police stations. Owing to this arrangement, any matter referring to the health service that requires immediate action or solution, is reported by telephone at any time, day or night, to the district health officer.

FINANCIAL STATEMENT.

The appropriations made by the municipalities amounted to ₱35,312.53. The province set ₱17,000 aside as contribution to the health fund for 1919.

Upon a basis of 508,272 as the population of this health district, in accordance with the official census for 1918, the contribution per capita for sanitary purposes is ₱0.10.

Although in Table B it appears that, at the end of the year, there was a balance of ₱1,530.46, the real fact is that there are still many obligations contracted during 1919 (medicines, disinfectants, etc., including ten months bonuses due to the sanitary personnel) which were not yet paid at the end of the year.

The provincial board, upon the recommendation of the district health officer, passed a resolution requesting a loan of ₱40,000 from the Insular Government to be used for the purchase of land whereon to construct a permanent building for a hospital for communicable diseases, for the purchase of materials and construction of said hospital, and for the purchase of equipment, but this loan was denied due to lack of funds.

One municipality (Dumangas) applied for a loan of ₱25,000 to be used for the construction of a sanitary market, but the result of this petition is not yet known.

VITAL STATISTICS.

The figures representing the population of this province from 1916 to 1919 were taken from the population filed at the office of the Provincial Secretary. They show a constant but little increase from 1916 to 1918 and a decrease in 1919.

Immigration played an important part in the increase of population in this province. The cause of decrease for 1919 was the influenza epidemic of 1918. In 1919 the deaths registered a higher number than the births, which would give a decrease in population for 1920, and which was due to the presence of cholera, smallpox, and dysentery of epidemic character in 1919.

Infant mortality, in this health district as well as in others, increased every year since 1916. The district health officer stated "that insufficient nutrition due to scarcity of food caused by the high price of foodstuffs, especially rice, together with the loss of lives of many infants, who have been deprived of the protective immunity against smallpox by the ignorance and superstition of their parents, would explain the increase of infant mortality in 1919.

Convulsions.—Convulsions in infants holds first place as cause of the greatest number of deaths, while malaria holds second place.

The number of deaths reported as convulsions in 1919 is only equalled by the number reported in 1916 in which year an epidemic of cholera and dysentery took heavy tolls in life. The number registered in 1919 is sixteen times the number registered in 1918 and 74 times that reported in 1917.

If it is remembered that 95 per cent of the deaths which occurred were without medical attendance, it is not adventuresome to affirm that many cases of deaths reported as convulsions really were due to the epidemics registered.

Malaria.—Malaria prevailed in this province, as well as in others, because mosquito breeding places are abundantly scattered over the inhabited areas.

Beriberi.—Beriberi in infants appears not to have produced any mortality in this province, but the truth is that it escaped detection in the diagnoses, and the cases were reported as convulsions.

COMMUNICABLE DISEASES.

Of the total mortality, 48.6 per cent belongs to communicable diseases.

With reference to this matter, the following is quoted, taken from the annual report of this health district:

"The entire and complete suppression of deaths caused by preventable diseases must be, of course, and is really in fact the supreme ideal of the sanitarian. But sufficient means to obtain that result in Iloilo province are not at hand. There is a great deficiency of sanitary personnel because in 70 per cent of the municipalities, only one sanitary inspector is employed, who, besides his clerical work, has to vaccinate and inspect a population scattered in different barrios and sites, many of which are from 10 to 15 or more kilometers distant from the poblacion, with no regular roads to pass over. If, in connection with this work, the salary paid said personnel be considered (from ₱20 to ₱30 per month) and the high cost of living, it must be admitted that no great success can be obtained in the fight against preventable diseases."

Smallpox.—Smallpox appeared in the municipality of Iloilo in February with 14 cases and four deaths. From this town the epidemic spread to others, and during the year there were 2,977 cases with 1,996 deaths, making a morbidity rate of 620 per 100,000 population.

It was not possible to hospitalize all the cases because the great majority of the patients were in distant localities which were out of the reach of the ambulance of the hospital and because the hospital could not accommodate more than 50 patients at one time.

Cholera.—The first case of cholera in Iloilo was registered in a passenger who arrived on the steamer Macaria from Manila. Probably some of the laborers who came from Manila were cholera carriers and spread the disease among the population. While this is a plausible explanation as regards the cholera outbreak in Iloilo in the month of July, it is also a fact that cholera prevailed in the province since last year and there is therefore a probability that carriers from the municipalities infected during January caused the outbreak in July.

The morbidity rate was 185 per 100,000 population and the mortality rate was 65 per cent among hospitalized cases and 80.23 per cent among non-hospitalized. One emergency hospital was established in Iloilo, wherein cases from this municipality and from the municipalities of Jaro and Oton were hospitalized.

Dysentery.—All the municipalities of the province were infected with dysentery since the beginning of the year, causing a greater mortality than cholera and smallpox combined.

The morbidity rate was 6,930 per 100,000 population and the fatality rate 84 per cent.

The people do not pay attention to this disease and the sanitary personnel generally gets its first knowledge of the outbreak of this disease from the burial permits. Direct contact as stated by the district health officer, was the principal reason why the disease could not be checked promptly and successfully and why it caused more victims than cholera and smallpox together.

Influenza.—Influenza ceased to be considered as an epidemic in the month of September. The morbidity rate was 60 per 100,000 population, and while the fatality rate was 100 per cent, this is to be explained by the fact that cases were not reported, but only deaths.

Rabies.—Thirty-one persons were reported bitten by rabid dogs during the year, 12 of whom died. The antirabic treatment was administered to only five persons. No reason is given by the district health officer why the other persons were not treated.

The muzzling of dogs was no longer enforced in the province during the year.

Leprosy.—Thirty-two lepers were captured and 26 were sent to the Culion Leper Colony. Six died in the detention house.

It is estimated that over 50 lepers are still in hiding in the most unfrequented and distant parts of the municipalities. When lepers become aware that they are being hounded by the sanitary personnel, they determine, either to resist being captured, or to escape upon their appearance, running into the thickest part of the forest. Generally the municipal authorities are tireless in their efforts to run the lepers remaining in the province down to their hiding places.

VACCINATION.

Five hundred sixty thousand one hundred fifty-nine vaccinations, which are more than the total population of this province, were performed during the year, with 62 per cent positive results.

The work was performed by 15 doctors, one nurse, two midwives and 60 sanitary inspectors, of whom 20 were sent as aid from the Central Office.

Some persons objected to be vaccinated and were prosecuted before the Justice of the Peace; other persons left their homes at the approach of the vaccinators, and others, immediately after the vaccinators had gone, washed off the vaccine virus.

MEDICAL RELIEF.

Three additional dispensaries, one in each of the newly organized municipalities, were established.

The district health officer of Iloilo took no active part in the organization of woman's clubs, puericulture centers, etc., but only in the management of the baby contests.

The operation of the "Gota de Leche" of Iloilo and Jaro consisted simply of visits made by their nurses to the newly born infants, for which, if necessary, they distributed milk daily; they also instructed mothers as to the proper care of infants. The same instructions were also given by the district nurses as preventive measures in infant mortality work.

MEDICAL INSPECTION OF SCHOOLS.

The existing sanitary conditions found at inspection of schoolhouses were satisfactory.

The pail system was the adopted means for the disposal of human excreta. Scabies and dental caries were the principal affections found among the pupils inspected.

WATER SUPPLIES.

The bulk of the population, especially in the capital, depend upon rain water for drinking purposes.

The district health officer recommended in 1918 to the members of the Legislature from this province the passage of a law appropriating money for the establishment of a water system in Iloilo, but no report of any kind with reference to this matter has yet been received. On the island of Guimaras and in the interior of this province there is plenty of good water

from springs which could be utilized for the establishment of a safe and good water system, but due to lack of funds no action has been taken.

The few artesian wells in Iloilo and Jaro do not supply potable water.

Artesian wells will not solve the water problem in this district.

DISPOSAL OF EXCRETA.

Repeated recommendations to the municipal councils for the adoption of an ordinance enforcing the installation of the Antipolo system have proved fruitless.

The majority of the municipal councils allege that the reason for not adopting the Antipolo system of closets is the lack of necessary funds, the high cost of materials, and the high wages demanded by the workmen, but using local materials the cost of a closet of the Antipolo system varies from ₱30 to ₱60.

In the municipalities of Iloilo, Oton and Tigbauan, 22 septic tanks have been established in private houses.

MISCELLANEOUS.

Though requisitions were made in the beginning of 1919 for the equipment of a provincial laboratory, only a part of said equipment was received during the month of December. Microscope, reagents and other important equipment have not as yet been received.

Five markets and seven slaughterhouses were built during the year without water supply systems.

Clean-up week was carried out with success in accordance with the plan outlined by the Public Welfare Board. The prize offered was won by the Cabatuan Elementary Schools.

THIRTY-FIRST HEALTH DISTRICT, PROVINCE OF ANTIQUE.

(Assistant Surgeon BARTOLOME GELLA, M. D., *Acting District Health Officer.*)

ORGANIZATION.

The sanitary organization remains the same as that of the past year.

In Table A it would appear that only one doctor is serving as president of sanitary division as against two for the year 1918. This is due to the fact that a president of sanitary division resigned, and no one was available to fill the vacancy due to lack of applicants until a graduate nurse was appointed to fill this position. Two more graduate nurses were appointed to take the positions of presidents of the 3rd and 4th sanitary divisions. The other four employees were assigned to each sanitary division in connection with epidemics.

FINANCIAL STATEMENT.

Six thousand two hundred fifty-six pesos and seventy-seven centavos is the sum appropriated from municipal funds and ₱4,000 by the province, making a total of ₱10,256.77 the sum appropriated for 1919, and as the population of this health district is said to be 159,644, the contribution per capita of this health district for sanitary purposes is ₱0.06.

A balance of ₱2,341.53 remained at the beginning of the year which was reduced to ₱1,294.77 at end of said year.

The municipality of Pandan requested a loan of ₱1,500 for artesian wells, Dao ₱5,000, and Sibalon ₱1,560.

VITAL STATISTICS.

The total mortality during the year exceeded the number of births registered, this same fact being noted during 1918. The influenza epidemic was the cause of such great mortality in the year 1918 and cholera, dysentery and smallpox in 1919.

The infant mortality is also increasing every year, and the explanation given by the district health officer therefor is that the lack of care of infants by their mothers and lack of proper nutrition of infants owing to high prices of food are the principal causes of this increasing infant mortality.

This fact may be accepted in part, but it must also be admitted that the true cause of such high mortality is wholly due to the epidemic which developed in this health district during the year rather than to lack of proper nutrition.

Deaths from malaria were less than those in the past year, but no conclusion could be reached on account of the abnormal sanitary conditions of the province in the present year.

COMMUNICABLE DISEASES.

Dysentery.—Bacillary dysentery remains in the province practically at the same rate as that in the past year, as well as cholera which has not been completely eradicated since 1916.

This fact is due to the lack of sanitary personnel in the province because with such limited appropriations as the province has for sanitary purposes, neither physicians nor graduate nurses can be induced to take positions in this health district.

Desentery and cholera remained until the end of the year and aid in personnel has been sent by the Central Office to control these two epidemics.

Smallpox.—Smallpox, which appeared in 1918, continued in the year 1919 reaching the maximum rate of mortality in the month of May, but at the end of the year it was already considered as controlled. Intensive vaccination was carried on throughout the whole province by appointing temporary vaccinators, while in some municipalities, the police force was also utilized as vaccinators.

Typhoid fever.—Typhoid fever remained with the same rate as that in the past years, and as this disease, like cholera and dysentery, spreads thru excreta and improper water supply and as the province has no artesian wells or other sanitary water supply as well as an insufficient number of sanitary closets, as can be seen in Tables S and U, it is not strange why said disease is prevalent in this health district.

Influenza.—The influenza epidemic can be considered as ended at the end of January, only very few cases having been registered after said month.

Leprosy.—Only three lepers were captured during the year and sent to Culsion Leper Colony.

No special measures were taken for the control of epidemics except that adopted for the control of smallpox. The regulations prepared by the Central Office for the management of epidemics were followed by local authorities so far as the personnel was available.

VACCINATION.

The whole population of the province was vaccinated against smallpox, because in Table Z it is reported that 85,836 vaccinations were performed,

not including the vaccinations performed by a party of 24 vaccinators assigned to this health district. The 65 per cent of positive results reported shows that practically all the population of this province is immunized against smallpox.

MEDICAL RELIEF.

No new dispensaries have been opened during the year and only one public dispensary is available to attend the indigents of this province. Only 1,140 adults and 260 infants were attended during the year and with this poor work as medical relief given by the sanitary personnel in the province, it is not surprising to note that 99 per cent of the deaths registered are without medical attendance.

Twelve women's clubs have already been organized in the province with a view to reducing infant mortality and their work has been confined to increasing food production and to obtain medicines for the treatment of the indigents.

One nurse is available for the same purpose as that of the woman's clubs, and very little work has been done by said nurse as can be seen in Table P.

MEDICAL INSPECTION OF SCHOOLS.

The schools inspected were found in excellent sanitary condition and have sanitary disposal of excreta.

One thousand one hundred thirty pupils were treated at homes and dispensaries and the principal affections found were scabies and dental caries.

WATER SUPPLY.

Only rivers and insanitary dug wells are the waters supplies available in the province. There is a project for water supply for the next year utilizing a spring in the hills and establishing hydrants in the municipality of San José, Antique. The work has already begun.

DISPOSAL OF EXCRETA.

Only five municipalities have adopted municipal ordinances enforcing the establishment of the Antipolo system as disposal of excreta. The rest have no regulations for this purpose.

MISCELLANEOUS.

Public schools and woman's clubs have played an important part in carrying out the clean-up week.

THIRTY-SECOND HEALTH DISTRICT, PROVINCE OF CEBU.

(Surgeon ALFONSO RAQUEL, M. D., *District Health Officer.*)

ORGANIZATION.

Two more sanitary organizations were organized in 1919, which brings the total number of existing divisions up to 16 sanitary divisions within which are comprised the 50 municipalities of this province.

In the present as well as in the last year a shortage of doctors to take charge of the positions of presidents of sanitary divisions has been observed. Three male graduate nurses were appointed as acting presidents of sanitary divisions, who together with the six doctors, make in all nine presidents for the sixteen existing sanitary divisions.

Almost every president controls two sanitary divisions for the accomplishment and due supervision of the work.

With the exception of the Camotes and Bantayan Islands in which are located seven municipalities, the rest are accessible to auto thru first class roads.

FINANCIAL STATEMENT.

The actual appropriation for health found based upon 5 per cent of the general fund proved insufficient to cover the most important needs of the health organization. The necessity to raise the present rate of contribution is imperative. The deficit at the end of 1919 was ₱21,401.90.

The municipal allotments amount to ₱32,700.82, and as an equal sum was appropriate by the province, the total contribution both by the province and municipalities to the health fund of the province for 1919 was ₱65,401.64, or ₱0.08 per capita considering that the population of this health district according to the last census of 1919 is 857,857.

VITAL STATISTICS.

The increase in the death rate is due to increase in the number of deaths under one year and to epidemics.

No change was observed in the birth rate, but the marriage rate decreased. No explanation is given by the district health officer with reference to above decrease.

The infant mortality is increasing, and the district health officer stated that this is due in part to lack of instruction of mothers concerning this matter.

The high rate of death registered from convulsion of infants, congenital debility, beriberi, diarrhœa and enteritis, acute bronchitis, and cancer as can be seen in table "F", is undoubtedly due to the fact that many cases dying from smallpox, dysentery, cholera, and typhoid fever have been diagnosed as having died from the above common causes. Through lack of sanitary personnel, the death certificates are filled out by municipal secretaries or their clerks, and many dead bodies are buried without medical examination.

The deaths reported as from beriberi in the year 1918 were more than those in 1919 but this is so, because in 1919 beriberi in adults was separated from beriberi in infants. The sum of these two items in 1919 is practically equal to the number registered in 1918.

The number of deaths from malaria is notably decreasing if compared with previous years. As the district health officer gives no explanation in this regard, it is believed that such reduction is not real but merely due to error in statistics.

COMMUNICABLE DISEASES.

Deaths from communicable diseases registered gave a total of 14,278 as against 7,082 for the past year, in spite of the influenza epidemic of 1918. And out of this total, 8,686 were from smallpox, 1,516 from dysentery, and 903 from cholera. Pulmonary tuberculosis came second to smallpox. No such high mortality from preventable diseases has been noted in this province since many years ago.

Smallpox.—The smallpox epidemic in this health district began in June, 1918, but inasmuch as only 250,000 persons were vaccinated during said year, the epidemic continued during 1919, with a total of 14,581 cases and 8,686 deaths. This gives a morbidity incidence of 1,588 per 100,000 population and 60 per cent fatality rate. Sixteen emergency hospitals were

established wherein 1,949 cases were hospitalized, and a more extensive and proper vaccination was carried out for the control of the epidemic.

Cholera.—The epidemic of cholera in 1918 was controlled in January, 1919, but new cases appeared in four municipalities in May. Eighteen municipalities were infected during August, but the outbreak was again controlled in October, one thousand four hundred seventy-five cases and 858 deaths having been registered in all. The morbidity rate was 155 per 100,000 population while that of fatality was 60 per cent. Eighteen emergency hospitals were established in which 722 patients were treated. The death rate among hospitalized cases was 33.4 per cent while among those not hospitalized it was 82 per cent.

Dysentery.—Dysentery appeared in January in ten municipalities. This epidemic spread widely, and by August, the fifty municipalities of the province were all infected. Two thousand one hundred eight cases with 1,485 deaths constituted the toll contributed by this disease to the general mortality. The morbidity rate was 225 per 100,000 population, with a fatality rate of 70 per cent.

At the end of the year 18 municipalities remained infected.

No special measures were taken for the control of the epidemic.

Influenza.—Influenza remained epidemic up to February, but sporadic cases continued to appear in some municipalities up to the end of the year.

Rabies.—Ten suspected cases of rabies were registered to all of which antirabic treatment was administered. Only two died.

Leprosy.—One hundred twenty-three lepers were collected during the year. This is the province which gives every year the largest number of lepers to the Culion Leper Colony.

Great efforts have been made to collect lepers scattered throughout this province. The real causes of the prevalence of this disease in this province may be grouped into two, according to the district health officer, namely, (a) homelove and (b) ignorance.

(a) It is known that most of the Filipino people, in spite of all disadvantages, do not like to be away from their families, or to be far from the place where they were born. This custom is still prevalent among common people as well as among leper families.

(b) The fear of scientific treatment is another of the factors that prevent the health authorities from capturing or locating lepers.

Taking into consideration the number of patients captured during the previous years and also during the present, besides the information not in the possession of the office of the district health officer, it would be safe to assume that probably there are about five hundred lepers still scattered in this province.

VACCINATION.

Five hundred seventy-eight thousand seven hundred eighty-three persons were vaccinated during the year by provincial and municipal sanitary personnel, which added to the 104,583 performed by the Insular vaccinating party, makes a total of over 685,000, and if to this total is again added the 350,000 vaccinations performed during 1918, a grand total of one million have been vaccinated in two years, which is more than the population of Cebu.

Vaccination was performed with little difficulty among the people in the barrios. In some places the people themselves requested vaccination.

MEDICAL RELIEF.

Practically every municipality is supplied with the necessary medicines for use in general consultation. Dispensaries are attended once a week by the presidents of sanitary divisions.

Eighteen emergency hospitals for the eradication of epidemics were established, and without doubt it may be said that this is the only means at present available in this locality to handle epidemics. In some instances obstacles arise when municipalities have no funds to support the quarantine houses.

During the year seven new dispensaries were opened, making a total of 31 in operation at the end of the year.

Three more women's clubs were organized during the year.

Two baby contests were held during the year. The district nurses continued their work of instruction in connection with the reduction of infant mortality, resulting in the registration of 32 more midwives for the city of Cebu only.

The work performed by the district nurses is stated in table P.

MEDICAL INSPECTION OF SCHOOLS.

Of the 132 public schools inspected, 80 were found without sanitary disposal of excreta. A number of them was found in an overcrowded condition with fair ventilation and light.

WATER SUPPLIES.

One hundred and six new artesian wells were drilled during the year, according to the report of the district health officer. This province broke the record of drilling artesian wells in the provinces. With these new 106 artesian wells, the percentage of population using artesian well-water has notably increased.

DISPOSAL OF EXCRETA.

In almost all the municipalities the Antipolo system ordinance for disposal of excreta has been passed, but enforced in very few municipalities, their reason being due to inability of the poorer class to afford the cost of such a system, which is only from ₱15 to ₱25.

MISCELLANEOUS.

The provincial laboratory devoted all its work during the year to examination of feces for the detection of cholera cases and carriers, and also to examination of blood for leprosy and some water samples.

Municipal ordinances were passed in some municipalities providing for compulsory notification of births and deaths, communicable diseases, and compulsory quarantine and hospitalization of cholera and smallpox cases.

In conjunction with clean-up week, the district health officer advised the municipal presidents that 30 days before the celebration of any town fiesta, his office must be notified. This rule was adopted as matter of prevention from communicable diseases, and if the fiesta is allowed a clean-up week is declared in the barrio or town where the fiesta is celebrated.

In general, every year the celebration of clean-up week in this province has always been productive of satisfactory results.

THIRTY-THIRD HEALTH DISTRICT,
PROVINCE OF ORIENTAL NEGROS.

(Assistant Surgeon JOSÉ C. ZARRAGA, M. D., *District Health Officer.*)

ORGANIZATION.

No changes have been made in the sanitary organization of this province in the present year.

Two more assistant sanitary inspectors and one clerk were the only additions made in the sanitary personnel of this province.

This health district uses telephone, telegraph and mail service in transmitting information regarding sanitary matters.

The province has only about 87 kilometers of good roads passable by automobile.

The Island of Siquijor, organized as a subprovince of Oriental Negros, is included in this health district.

FINANCIAL STATEMENT.

Eleven thousand six hundred sixteen pesos and seventy-eight centavos was the appropriation made by the municipalities of the Province of Oriental Negros as contribution to the health fund of this health district and ₱6,000 was the appropriation made by the province, making a total of ₱17,616.78 or ₱0.08 per capita, considering that 215,541 is the population of this province.

The municipalities of the subprovince of Siquijor contributed ₱1,851.48 to the health fund of this district, and the subprovince set aside an equal sum, making a total of ₱3,702.96 for sanitary purposes. The per capita rate is ₱0.06, if it is considered that 56,695 is the population of this subprovince.

VITAL STATISTICS.

In the data pertaining to vital statistics are included those pertaining to the subprovince of Siquijor. The number of deaths in the year 1919 was larger than that of births due to the epidemics of cholera, dysentery, smallpox and influenza registered in this health district.

Such a remarkable decrease in the number of births is not explained by the district health officer.

Infant mortality rate is much less than the rate registered in 1918, but remains at a high rate.

With reference to this matter, the District Health Officer submitted the following statement:

"One of the principal factors that contributed to the high rate of infant mortality is the famine that reigned in the province during the year. Thanks to the flour of *buri*, *sacsac*, etc., because otherwise the people would have died of hunger. Mothers who have for food this kind of flour are always badly nourished and for this reason they nurse their children poorly. Infants died mostly of gastro-enteritis."

Remarkable increase has also been noted in the number of deaths attributed to simple meningitis, beriberi in both adults and infants, diarrhœa and enteritis under and over two years old, acute bronchitis and broncho-pneumonia.

Indubitably this is due to the fact that many persons who died from any of the epidemics registered, have been diagnosed as having died from the causes above stated.

COMMUNICABLE DISEASES.

Smallpox.—The smallpox epidemic registered is the continuation of the one registered in the past year. It became most severe during the months from January to June, the Subprovince of Siquijor being the one most severely infected.

In order that the epidemic might be put under control as soon as possible the hospitalization of cases and extensive and intensive vaccinations were directed and performed by the employment of 14 temporary vaccinators.

Seventeen emergency hospitals and isolation houses were established and 687 cases were hospitalized.

The morbidity and fatality rates are given in Table I of this report.

The Central Chapter of the Red Cross sent two nurses to the Island of Siquijor in the month of April to attend the emergency hospitals established.

Cholera.—Cholera, which was controlled in February, reappeared in July in the municipality of Siquijor. The municipal president of this town did not notify the health authorities of this fact, but it was discovered when the high mortality registered in said town was noted in the weekly report submitted and one week had passed before the matter was noted by the health authorities.

Three isolation houses were established in the said town wherein 133 cases were treated.

The epidemic was put under control in September. The fatality rate was 71 per cent among those hospitalized and 81 per cent among those not hospitalized.

Quarantine regulations were strictly enforced and some violators were prosecuted, but according to the statement of the district health officer, the justice of the peace did not punish them as they ought to have been, so that the people instead of paying more attention to said regulations, have abused their duty to comply with the regulations.

Dysentery.—Cases of dysentery were known only at the time when death certificates were requested and therefore the fatality rate is 100 per cent. No measures were taken against this epidemic.

Influenza.—Influenza continued with relative severity until January, decreasing in the succeeding months. Cases reported are of the same number of deaths as those which were supposed to have become known only after death.

Malaria.—With reference to malaria the district health officer stated that most of the cases registered were among emigrants proceeding from Mindanao where they went as laborers and came home when they were severely sick.

VACCINATION.

Vaccination was carried on extensively and intensively in this province by the regularly appointed sanitary personnel and 15 temporarily appointed vaccinators. Five thousand units of vaccine virus were used weekly and the total number of vaccinations performed during the year is that noted in Table K.

MEDICAL RELIEF.

Only three public dispensaries were established in this health district where 2,254 adults and 631 children were treated during the year.

With the object of reducing the infant mortality one woman's club

was established in Dumaguete. The members of this club used to go from house to house looking for sick children and reporting them to the district health officer or to the president of the first sanitary division, to be treated. District nurses also made the same inspections, teaching the mothers in regard to the care of infants, but no other work has been done by these nurses as can be seen in Table P of this report.

MEDICAL INSPECTION OF SCHOOLS.

Schools inspected were found in almost good sanitary condition, but some of them are not provided with disposal of excreta.

Pupils found suffering from any affliction were treated in their homes or at the dispensary.

WATER SUPPLY.

Only three new artesian wells were drilled during the year. All the towns of the Subprovince of Siquijor, with the exception of only one, are provided with waterworks which furnish safe water, but only one-third of the population can use these supplies—those living in the center of the *población*—but those living in barrios use unsafe drinking water obtained from surface wells.

DISPOSAL OF EXCRETA.

Every town of this health district has passed an ordinance enforcing the establishment of the Antipolo system as disposal of excreta and 4,144 were newly established during the year in private premises, the municipality of Maria occupying first place in this drive.

MISCELLANEOUS.

All markets and slaughterhouses in this health district are in good sanitary condition and municipal ordinances for the protection of food sold are enforced.

Clean-up week has resulted in a great success, not only on the part of the health organization, but also on the part of the whole province.

THIRTY-FOURTH HEALTH DISTRICT, PROVINCE OF OCCIDENTAL NEGROS.

(Senior Surgeon DONATO MONTINOLA, M. D., *District Health Officer.*)

ORGANIZATION.

No changes have been made in the sanitary organization of this health district.

In the sanitary personnel, one district nurse for the municipality of Kabancalan was employed as well as the creation of the position of provincial dentist for the treatment of school children and indigent persons.

FINANCIAL STATEMENT.

The municipalities appropriated ₱21,497.81 as contribution to the health fund of the province and an equal sum was appropriated by the province, making a total of ₱42,995.62 available for sanitary purposes for the year 1919, or ₱0.11 per capita, considering that 397,325 is the population of this health district.

A balance of ₱3,633.84 remaining at the end of last year was added to the total sum appropriated for 1919. A balance of ₱3,122.79 remained at the end of the year.

VITAL STATISTICS.

The mortality rate during the present year was greater than the birth rate, due to the high mortality registered from smallpox, dysentery and cholera.

Probably the reduction of the number of births was due to the high mortality in the year 1918 by influenza.

The infant mortality rate of this year was lower than that registered in 1918, and increased, if it is compared with that registered in 1916 and 1917, due to the epidemic of smallpox registered in the present year.

MOST COMMON DIAGNOSES USED.

Deaths attributed to convulsions remained at a high rate, which is due to the fact that no steps have been taken to ascertain the true diagnoses. The same may be said with respect to congenital debility.

Deaths attributed to diarrhoea and enteritis have suffered a notable decrease, as compared with previous years, and is indubitably due to the fact that many cases of cholera have been diagnosed as diarrhoea and enteritis, with the end in view of avoiding the enforcement of sanitary measures.

Perhaps the same reasons may be adduced with reference to the increase in the number of deaths attributed to malaria as shown in Table F.

COMMUNICABLE DISEASES.

The number of deaths registered from communicable diseases is greater than that registered in 1918, if the deaths caused by the influenza epidemic are eliminated from the year's record of deaths.

Dysentery.—Dysentery prevailed in the province since 1916, but a notable increase was noted in the present year.

No consideration has been given this disease because it never has been considered as communicable by the people and the sanitary authorities are not notified of the cases and therefore no sanitary measures have been taken to prevent its propagation.

The climax of the infection was reached in August, there being 938 per 100,000 population as morbidity rate and 81 per cent fatality rate.

The fact of so high a fatality rate as well as the non-establishment of emergency hospitals to eradicate the disease, is proof of the above affirmation.

Cholera.—Cholera was a continuation of the epidemic which appeared in the province in the previous year.

The epidemic of the past year was considered as terminated in the month of March, but a new outbreak was registered in the month of August, infecting three municipalities. In October 16 municipalities were infected, and at the end of the year the epidemic was controlled in these municipalities, but the infection appeared in a new municipality (San Carlos), registering in said month 28 cases and 11 deaths.

The morbidity rate was 168 per 100,000 population and the fatality 73.7 per cent.

Smallpox.—Smallpox was also a continuation of the epidemic in 1918, but in the month of December only 9 cases and 8 deaths were registered among three municipalities infected.

In some municipalities the infection acquired greater extension, due to the variolization practised by ignorant persons, but this evil practice

was stopped by the health officers. Two emergency hospitals were established in which 116 cases were hospitalized.

The morbidity and mortality rates may be seen in Table H-2 of this report.

Influenza.—Influenza remained as epidemic up to the month of March, but sporadic cases were registered during the whole year.

Typhoid fever.—Typhoid fever also suffered an increase, if compared with the number of deaths registered by said disease in previous years, probably due to the fact that many cases of dysentery were registered as typhoid fever, no laboratory examinations being performed to ascertain the diagnoses.

Tuberculosis.—No statement is made with reference to tuberculosis, because this cause of death remained practically at the same status as that of previous years.

Leprosy.—Of the 16 lepers captured, 12 were sent to the Culion Leper Colony, two died, and two escaped from the detention house.

Only routine measures were taken for the control of cholera and smallpox.

VACCINATION.

Nearly the total population of this health district was vaccinated during the year. The vaccination work was performed by the regular sanitary personnel of the province, plus 20 temporary vaccinators appointed by the province, and 10 detailed from the Central Office. Seventy-three per cent of the vaccinations resulted positive and no trouble was encountered during the campaign.

MEDICAL RELIEF.

Only one new public dispensary was established during the year, closing the year with 26 in operation.

The provincial dentist reported the following work performed by him:

Eight thousand seven hundred forty pupils were inspected and cases treated: 2,842 cases of dental caries; 289 cases of malocclusions; 74 cases of bleeding gums; 11 cases of pulpitis; 3 tumors. Three hundred and twenty-five pupils had teeth extracted and 7 amalgam fillings were made.

Three new women's clubs were established and three baby contests celebrated during the year. The majority of the woman's clubs did nothing towards the reduction of infant mortality.

Only the association of Bacolod and Silay, through the nurses appointed by and paid from the association's funds, gave instructions and treatment to pregnant women and mothers and attended to the care of infants.

But unfortunately and in spite of the work done by the 12 district nurses the deaths by puerperal state and infant mortality rate have not shown a marked tendency to decrease, as may be seen in Tables C and O of this report.

MEDICAL INSPECTION OF SCHOOLS.

All the schools inspected were found in excellent sanitary condition, as much so in the general sanitary requirements as in the disposal of excreta.

Pupils found with any affection were treated either at the dispensary or at home.

WATER SUPPLIES.

Thirteen new artesian wells were drilled during the year. The majority of wells require pumps to draw the water.

DISPOSAL OF EXCRETA.

Only two municipalities (Valladolid and San Enrique) have not passed the ordinance enforcing the installation of the Antipolo toilet for the disposal of excreta.

The number of new buildings as well as the number of septic tanks constructed are noted in Table U of this report.

MISCELLANEOUS.

The municipality of Bacolod requested a loan of ₱6,000 for the establishment of a public clinic for indigent persons, and the municipality of Talisay ₱25,000 for the erection of a public market.

The greater part of the work done by the provincial laboratory consisted of the examination of dancing girls in cabarets and dancing halls.

Six sanitary markets and seven slaughterhouses were built during the year.

THIRTY-FIFTH HEALTH DISTRICT,
PROVINCE OF BOHOL.

(Medical Inspector MANUEL MA. AYCARDO, M. D., *District Health Officer.*)

ORGANIZATION.

The organization of this health district remains the same as that of the previous year. Some barrios of Inabanga and Tubigon have been separated to constitute the new municipality of Clarin. A sanitary inspector has been assigned to this new municipality. Six out of the ten sanitary divisions of this health district remained vacant during the year, no physician being willing to take such positions on account of the low salary assigned.

Telephone is one of the methods employed in securing prompt information. The telephone service in this province, however, is not satisfactory.

The provision of an automobile for the district health officer has been greatly enjoyed at all times, giving the district health officer more advantage in making possible an immediate investigation of all suspected cases of dangerous communicable diseases and the prompt application of sanitary measures in the field.

FINANCIAL STATEMENT.

The municipalities contributed ₱14,826.76 during the year 1919 for sanitary purposes. The provincial fund contributed an equal sum, making a total of ₱29,655.52, or ₱0.08 per capita, estimating the population of this health district at 359,600, as can be seen in Table C.

While it is true that the total appropriation for the health fund amounted to ₱51,778.39, this amount includes the balance brought over from 1918 and ₱4,227.32 for the land tax. The expenses amounted to ₱40,299.91 leaving a balance of ₱11,478.48 at the end of the year.

The balance accumulated during the previous years was found, at the end of the year, decreasing consequent to the extraordinary expenses involved in connection with the systematic campaign of vaccination carried out during the whole year. The plan to establish a provincial hospital which would fill a long-felt want in the province has not as yet been carried out.

VITAL STATISTICS.

The death rate remained the same as that of the year 1918, but higher than that of the year 1917. This was due to the outbreaks of smallpox, cholera, and dysentery which developed about the same time during 1919.

Infant mortality as in other health districts is increasing every year, and the explanation given by the district health officer is the same as that given by others, viz., carelessness of mothers in caring for their children, improper nutrition, etc., etc.

The number of deaths from the causes stated in Table F was greater than the number registered in previous years, especially from convulsions in infants, infantile beriberi, diarrhoea and enterities, and malaria. As the majority of these deaths may be prevented by a good method of sanitary control, it may be presumed that this health district has not efficiently applied its health organization.

COMMUNICABLE DISEASES.

Smallpox.—Four thousand seven hundred three deaths from communicable diseases were registered, smallpox occupying first place with 2,645 deaths. The smallpox epidemic in the province during 1919 is a continuation of that of 1918.

The epidemic has spread to a great extent in those municipalities located on islands wherein, through lack of means of transportation, probably no vaccination work was performed in previous years.

The main measure taken for the control of this epidemic was an intensive vaccination. All efforts have been made to establish emergency hospitals for isolation and treatment of cases, but all in vain. The officials concerned and the public in general supported the measure only in words and not in deed.

Quarantine of the houses infected could not be established efficiently as no Constabulary force was available during the year for quarantine service except in one municipality, the service of local policemen being practically useless.

The educational campaign was encouraged and proved once more to be one of the factors for the eradication of the epidemic.

Cholera.—Cholera appeared in the province from time to time during the year, yet, it never developed into a real epidemic. The cases appeared simultaneously in widely separated localities. Cholera carriers undoubtedly played an important rôle in spreading infection, a fact that is borne out by the results obtained in the microscopical examination of specimens taken from contacts and non-contacts, many of which were found positive.

No new methods were adopted to control the epidemic. House-to-house inspection, isolation of cases, quarantine of houses infected and disinfection were the principal measures taken.

Specimens were taken from all real and suspected cases and contacts, which were examined in the provincial laboratory.

Of the 141 specimens taken from contacts and non-contacts, 26 were found positive as active cholera carriers.

Dysentery.—Dysentery was present simultaneously with cholera during the second quarter. The eradication measures generally carried out in the case of cholera were also applied to dysentery, and in the end proved satisfactory.

Leprosy.—Thirteen lepers were collected, a few being still at large in certain parts of the province, hiding in inaccessible places.

VACCINATION.

Vaccination work was carried out in the infected municipalities, and more systematic, energetic and drastic measures have been adopted in this province. At the beginning, fifty provincial vaccinators were engaged to perform such systematic work of vaccination.

At the beginning of the campaign, many difficulties were encountered in bringing it into success. The topographical condition of infected municipalities where the epidemic had appeared, and this in serious form, hindered the work of inspection. Thickly populated Islands proved an excellent refuge for those who believed not in vaccination and isolation of patients.

MEDICAL RELIEF.

No new dispensaries were established during the year.

Ten women's clubs have been organized, although some of them existed only in name. The district health officer and the district nurses have sacrificed themselves in helping the members of the women's clubs to remedy such a state of affairs by demonstrating the importance of a women's club in the solution of the problems referring to infant mortality, but the increase of said mortality during the present year shows that not much work has been done along this line.

A conference of all women's clubs of the province was held at the capital and in this convention was selected a representative committee for the conference with the staff of the women's club of Manila.

In this convention, it was also resolved to establish a "Gota de Leche" in every district if financial conditions would allow, and to request provincial and municipal aid as well as aid from the Board of Public Welfare.

MEDICAL INSPECTION OF SCHOOLS.

This activity was carried out only in part during the year, the eradication of epidemics absorbing most of the sanitary personnel's time. Generally speaking, the sanitary condition of the schools was satisfactory.

WATER SUPPLIES.

Only three new artesian wells were drilled during the year. All the municipalities desire to have artesian wells, but no funds were available to defray the necessary expenses.

DISPOSAL OF EXCRETA.

It was stated in the annual report for 1918 that all municipalities already had passed and approved ordinances regulating and enforcing the establishment of the so-called Antipolo system, but it is regretted that upon personal revision by the district health officer of the records filed in his office, it was found that the municipality of Tubigon had not adopted the original copy furnished by the Service.

The number of Antipolo closets reported as newly built during the year is correct and those reported in the annual report for 1918 are incorrect as many pit systems were classified as Antipolo systems and the total number of such closets was only estimated.

MISCELLANEOUS.

During the beginning of the year no laboratory work has been done. Almost all specimens were sent to Cebu. In September, due to the arrival of some laboratory outfits, the work was completely carried out by the provincial laboratory and no more specimens were sent to Cebu.

Very little attention has been paid to the establishment of home gardens in this health district. The majority of the population are merchants, and go from one province to another, remaining for a few months in their homes to rest. This custom and the climatic condition of the province made the inhabitants dependent upon the products imported from other provinces for their living.

The valuable coöperation of the provincial and municipal authorities made the clean-up week a success.

THIRTY-SIXTH HEALTH DISTRICT,
PROVINCE OF PALAWAN.

(Senior Surgeon BUENAVENTURA TORIBIO, M. D., *District Health Officer.*)

ORGANIZATION.

This province is one of those having special organization in its government.

The province is divided into six sanitary districts and each district has a sanitary inspector with the duty of dispensary attendant.

There are only one doctor and four nurses to attend to the small population of this province.

FINANCIAL STATEMENT.

This health district is one of those in which no appropriation is made either by the province or municipalities as contribution for sanitary purposes.

This province received as aid ₱20,042 from the Insular fund in which are included the expenses incurred in maintaining the Cuyo and Puerto Princesa Hospitals and from which sum are paid the salary and traveling expenses of personnel as well as equipment, medicines and other items.

VITAL STATISTICS.

The population of this health district, according to the last official census, is 69,061, of whom 53,444 are Christians and the rest are non-Christians. But the data pertaining to vital statistics noted in table C are calculated from a population of 33,075 from whom only such data could be obtained.

Owing to the above-mentioned fact, the rate of death, including infant mortality, is less than the rate registered in other provinces because said data pertains only to the Christian population. The data pertaining to the non-Christian people, who have a more primitive custom and among whom the sanitary rules are ignored, and therefore the mortality among them would be higher than among Christian people, is not included.

Malaria is at the head of most common diseases diagnosed in this province, because there are some municipal health districts whose topographical condition make such places favorable for mosquito breeding. The number of deaths registered from this cause in 1919 was less than that registered in 1918, but greater than that of 1917 and 1916.

COMMUNICABLE DISEASES.

Sporadic cases of dysentery, smallpox, and typhoid fever were registered during the year, but did not constitute an epidemic.

An influenza epidemic appeared last year and continued until the present year, especially in the first quarter, causing 3,590 known cases and 212 deaths.

MEDICAL RELIEF.

One hospital with a capacity of 25 beds was established in Cuyo and another one with 12 beds in Puerto Princesa.

Each municipality has a public dispensary for the free treatment of patients.

One new woman's club was organized in Coron which has for its end the providing of funds to be expended with regard to obtaining the greatest possible decrease in infant mortality by appointing nurses to care for infants and pregnant women.

WATER SUPPLY.

The water commonly used for drinking purposes is rain water collected individually in galvanized iron tanks.

The perforation of artesian wells was tried, but without success.

DISPOSAL OF EXCRETA.

Only four municipalities have adopted the Antipolo system for disposal of excreta, and 43 of this kind of toilet were constructed during the present year. The material used for the construction of these closets may be obtained locally at a very low cost.

MISCELLANEOUS.

There are two small laboratories in this health district, one in Puerto Princesa and the other in Cuyo, but only routinary work has been performed in them.

REPORT OF THE DIVISION OF MINDANAO AND SULU.

(Dr. JACOBO FAJARDO, *Chief of Division.*)

From the standpoint of epidemiology and morbidity the year 1919 turned out to be a better one than 1918, though sporadic outbreaks of cholera and small-sized epidemics of smallpox were registered. In all instances drastic measures were taken and the outbreaks promptly brought under control. At the end of the year all the provinces of this division were free from cholera and only five municipalities of Surigao and six of Misamis remained still infected with smallpox but already in the stage of decline. The total number of deaths from different diseases during 1919 is 13,269 as against 17,207 in 1918.

Though the personnel devoted its time and efforts to combatting the epidemics, yet the program for sanitary improvements throughout the division was not abandoned. Special attention was given to the disposal of human waste. During the year 13,063 toilets of the Antipolo type were installed. Three municipalities of Surigao expect to inaugurate very soon new water supply systems. The hospitals in this division, which have been in operation since 1915, have helped and are still helping considerably in convincing the Mohammedans to realize the blessings derived from modern surgery and medicine. New dispensaries were opened in the interior of the Island of Mindanao and the inhabitants, who are Mohamedans and pagans, enjoy the benefits derived from these institutions.

I.

AREA.

There was no change at all in interterritorial area. The division embraced all the provinces within the Islands of Mindanao and Sulu.

II.

ORGANIZATION.

The organization of the provinces in the Department of Mindanao and Sulu is rather different than that of the regularly organized provinces. The district health officers are at the same

time the supervising physicians of the hospitals in their respective districts while the resident physicians are at the same time municipal health officers. This arrangement of assignment to dual positions was effected since the start of the organization of the Health Service in the Department of Mindanao and Sulu in order to meet the ever shortage of personnel and to carry out at the same time the policy of economy. The regular municipalities are embraced in sanitary divisions while the municipal districts are grouped into sanitary districts under the management of the respective dispensary attendants, the majority of whom are graduate nurses.

III.

PERSONNEL.

In spite of the great difficulties encountered in securing additional personnel, especially physicians and nurses—difficulties due to the natural timidity of the northern people to come to the non-Christian provinces, to the opportunities of securing positions either in Manila or nearby provinces, and to the fact that all physicians appointed or assigned in Mindanao and Sulu are denied the privilege of practicing their profession privately in accordance with the old statutory provision—men with splendid spirit and enthusiasm were found, after great efforts, to take part in this constructive and humanitarian task. These characteristics are not generally found in the female nurses, although there are many of them who are really enthusiastic in the work, but parental opposition and the opportunities for employment opened to them in the different institutions in Manila needing their services cause the difficulties of filling the vacancies. In addition to this, the female nurses appointed in Mindanao and Sulu, after a year of service and sometimes less, tender their resignation in order to get married. Since 1915 about 21 nurses and midwives of the Service resigned and were married in Mindanao and Sulu. The establishment of a school of nursing in the Zamboanga General Hospital would therefore be in order. Such a school would have the following advantages:

1. The profession of nursing would be greatly extended among the natives of Mindanao and Sulu.
2. Graduated nurses would be rather disposed to accept any positions within Mindanao and Sulu, hence the special privileges offered to induce nurses from the northern provinces to accept positions in this division could be discontinued and considerable saving effected thereby.
3. Considerable savings could be effected in the appropriation of salaries as the entrance salary to be given to native

graduates will be only one-half as much as that actually given to nurses contracted from the northern provinces, the latter being at least two grades higher than the usual entrance salary fixed by the Bureau of Civil Service.

4. The shortage of personnel, which has been and is still one of the many handicaps of the service in Mindanao and Sulu, due to the unavailability of trained personnel, would be remedied. Besides, a sufficient number of trained nurses could be made constantly available for the service in Mindanao and Sulu.

CHANGES IN THE PHYSICIAN PERSONNEL.

Surgeon Emilio Bulatao transferred from District Health Officer of Agusan to Assistant Professor of Physiology, University of the Philippines.

Surgeon Manuel V. Arguelles, bacteriologist of the Zamboanga Central Laboratory, appointed to a scholarship in the United States to specialize in serology.

Senior Surgeon Hilaron T. Feliciano, District Health Officer of Lanao, resigned.

Senior Surgeon Julian Pilares transferred from Resident Physician of the Rizal Memorial Hospital to District Health Officer of Agusan.

Senior Surgeon Enrique F. Ochoa transferred from the Central Office to District Health Officer of Lanao.

Assistant Surgeon Jesus Nolasco transferred from Resident Physician of the Sulu Public Hospital to a similar position in the Rizal Memorial Hospital.

Dr. Marcos Corpus, President of Sanitary Division in the province of Misamis, resigned.

Assistant Surgeon José Cuison, Resident Physician of the Cotabato Public Hospital, separated from the service.

Dr. Pedro Rodriguez transferred from President of Sanitary Division in the Province of Misamis to Resident Physician, Cotabato Public Hospital.

Dr. Cristobal Manalang transferred from Assistant Professor in Bacteriology and Pathology, University of the Philippines, to Bacteriologist of the Zamboanga Central Laboratory.

Dr. Paciano T. Garcia appointed Resident Physician of the Sulu Public Hospital.

Dr. Alfredo Polintan Rianzares appointed President of Sanitary Division, Misamis Province.

Dr. Amado Villarica appointed President of Sanitary Division in Davao.

The following table shows the personnel of this division:

Physicians	31
Commissioned officers.....	15
Non-commissioned officers.....	16
Nurses	42
Males	19
Females	23
Midwives	2
Dispensary attendants and sanitary inspectors.....	121
Total	196

IV.

DANGEROUS COMMUNICABLE DISEASES.

CHOLERA.

Province of Davao.—An epidemic of cholera in this province broke out on August 25. The first case, which ended fatally the next day, was a resident of the town of Davao. The next morning after the death of the first case another case, dying the same day, was recorded; on the same day another case was reported in the barrio of Maa of the same municipality and was followed on August 28 by another case, the husband of the patient who first succumbed to the disease. The two latter cases had the same fate as the first two. Then the infection spread throughout the municipality of Davao, continuing up to September 28, up to which date there were 33 cases and 22 deaths. As to the source of infection it is hard to believe that it was brought by immigrant laborers as the first cases were permanent residents of the town. Pollution of water did not play any part in this epidemic as evidenced by the slow spread of infection despite the fact that the rivers and springs upon which almost all the inhabitants of the town depend for water for domestic purposes extend all along the town. It is most probable that the infection owes its origin to the increased virulence of the microörganism in carriers. After a week's interval the disease reappeared on October 5 in the town of Davao. This reappearance of the epidemic corroborates the truth of the assertion that the first outbreak had its origin in carriers. The municipal district of Samal was infected on October 2. The customary transiency of the Mohammedans, due to the necessity to search for their daily bread, especially during the time when the shortage of food was keenly felt everywhere, and their frequent visits to relatives and friends helped not a little to spread the disease. It is pleasing to state, however, that after eight days the epidemic was held in check, registering but 4 cases and 3 deaths. The municipal district of Tagum did not escape infection, the first case having been registered therein on October 6. A thorough survey revealed the fact that a Mohammedan, with some companions who came from the town of Davao in a vinta (Moro boat) to the barrio of Hijo of that municipal district brought the infection. According to the information received a sister of this man died of cholera while on the way. Several cases were recorded thereafter, three of whom were companions of the first case, totaling 10 cases and 9 deaths up to the end of October. The disease reappeared in

Sirawan, municipality of Davao on October 20, from which date to November 13, 14 cases and 8 deaths were registered therein. The barrio of Inawayan was infected on October 29, the last case appearing on November 6. The barrio of Daliao was infected too on November 4. The epidemic was checked in November, up to which time 99 cases and 65 deaths in all were registered in the whole province, giving a mortality-rate of 65.6 per cent and an incidence in the municipality of Davao of 7.04 per 1,000 population, which is rather too low an incidence. taking into consideration the narrow extent of that municipality with its large population and means favoring a rapid spread of the disease.

Province of Lanao.—As a continuation of the 1918 outbreak only one case, followed by death, was recorded during the year in the whole province. This case occurred in Ganassi district.

Province of Misamis.—The cholera outbreak in this province was a continuation of the 1918 epidemic. It existed up to the end of the first quarter of the year, when it was practically placed under control. Only some isolated cases were registered in June, July and August. During the year 132 cases and 96 deaths were registered, giving an incidence of 1.02 per 1,000 population which is rather too low to constitute an epidemic.

Province of Zamboanga.—Throughout the year only 7 sporadic cases, all followed by death, were registered in the entire Province of Zamboanga, 3 in the barrio of Kuruan, 3 in San Roque and one on board the coastguard *Mindanao*. The latter was a member of the crew of said boat and arrived at Zamboanga already in a very serious condition. He began to feel sick while on his way to Zamboanga from Manila. Upon arrival he was immediately taken to the contagious disease hospital where he expired.

Aside from the prescribed routine measures, the inspection of all interisland vessels coming either from the north or south, including the bacteriological examination of stools of the passengers and members of the crews, was made and contributed not a little to curtailing the propagation of the disease and avoid serious outbreaks. During the year a total of 20 passengers from the north, bound for the south and 29 from the south, bound for the north have been found vibrio-carriers by the Zamboanga Central Laboratory. Immediately upon the receipt of the laboratory report telegraphic advices were sent to the health authorities of the places or ports of destination of the carriers.

In Davao the zone of infection was divided into four sections each of which was under the charge of two trained sanitary inspectors whose duty was to detect and search for cases. The same zone was divided into two disinfecting sections with two sanitary inspectors in each whose duty it was to make all the necessary disinfections. The work in all the divisions was under the immediate supervision of the District Health Officer.

Below is given the consolidated report of cholera during the year:

Cholera reported by months.

1919	Davao.		Lanao.		Misamis.		Zamboanga.		Total.		Mortality.
	C. ^a	D. ^b	C. ^a	D. ^b	C. ^b	D. ^b	C. ^a	D. ^b	C. ^a	D. ^b	Per cent.
January	0	0	1	1	34	32	6	6	41	39	95.12
February	0	0	0	0	70	42	1	1	71	43	60.56
March	9	8	0	0	4	4	0	0	13	12	92.30
April	0	0	0	0	0	0	0	0	0	0	
May	0	0	0	0	1	0	0	0	1	0	
June	0	0	0	0	4	4	0	0	4	4	100.00
July	0	0	0	0	13	8	0	0	13	8	61.53
August	7	5	0	0	6	6	0	0	13	11	84.61
September	26	17	0	0	0	0	0	0	26	17	65.38
October	28	23	0	0	0	0	0	0	28	23	82.14
November	29	12	0	0	0	0	0	0	29	12	41.37
December	0	0	0	0	0	0	0	0	0	0	
Total	99	65	1	1	132	96	7	7	239	169	70.71

^a C = Cases.

^b D = Deaths.

Cholera reported by municipalities.

Davao:	Cases.	Deaths.	Mortality. Per cent.
Davao	85	53	
Samal	4	3	
Tagum	4	3	
Hijo	6	6	
Total	99	65	65.65
Lanao:			
Ganassi	1	1	100.00
Misamis:			
Cagayan	9	7	
Misamis	20	20	
Plaridel	16	16	
Oroquieta	5	4	
Tagoloan	8	6	
Aloran	47	32	
Jimenez	27	11	
Total	132	96	70.45
Zamboanga:			
Zamboanga	7	7	100.00

SMALLPOX.

It will be noticed that the Provinces of Agusan, Bukidnon and Sulu have not experienced any epidemic of smallpox during both 1918 and 1919.

Province of Cotabato.—The three cases registered in this province during January and February were the end of the epidemic wave of last year. Towards the end of the first quarter the epidemic resumed its course reaching its apex in March, with only 183 cases and 50 deaths. Thence its downward curve began and was finally held in check in September. From September until the end of the year, except three isolated cases registered in December, the province has been clear of the disease. In this last small-sized epidemic Lebak and Glan were the seat of the heaviest infection.

Province of Davao.—The same as in the Province of Cotabato, the smallpox cases registered in Davao during the year were the end of the epidemic wave of last year. The disease, already in endemic form, remained unchecked until the middle of July, only the three municipalities of Santa Cruz, Malita, and Davao having been infected with an incidence rate of 6.23 per 1,000 population. Since then until the close of the year the disease has not made its reappearance in the province.

Province of Lanao.—Except the small-sized epidemic in the municipal District of Kolambugan, the Province of Lanao, unlike last year, has not been epidemically infected during 1919. The infection in Kolambugan was most probably brought by traders from the neighboring municipalities of Misamis, Aloran and Jimenez, Province of Misamis. The first case in Kolambugan was registered on February first. The disease prevailed until July, up to which time only 15 cases and 3 deaths were recorded in that municipal district. Aside from these, only 5 sporadic cases, 4 in Iligan and 1 in Dansalan, were recorded in the entire province throughout the year.

Province of Misamis.—In spite of the drastic measures taken, the smallpox outbreak of last year continued in 1919. At the beginning of the year the infection manifested a tendency to spread all over the province, but fortunately with the campaign undertaken five of the fifteen municipalities composing the province were saved from the infection. These municipalities are Cagayan, Balingasag, Gingoog, Initao and Tagaloan, the first having registered but one case. Misamis and Jimenez were the most heavily infected municipalities. The epidemic was

already on the wane in the month of May and at the close of the year it was almost under control, Aloran, Baliangao, Jimenez, Misamis and Talisayan being the only municipalities which remained infected.

Province of Surigao.—The 1918 epidemic in Surigao prevailed in 1919 registering in the month of August 371 cases, which was the largest number of cases registered in any month throughout the year. Of the fourteen municipalities in the province, those of the Pacific coast, namely, Hinatuan, Lianga, Tago and Loreto escaped infection. Cantilan and Dapa suffered the heaviest infection. Towards the close of the year the epidemic was already in its downward curve. Foremost among the factors retarding the control of the epidemic, especially in the municipality of Dapa, may be mentioned the geographical situation of the province, the lack of transportation and the non-coöperation of the inhabitants thereof.

Province of Zamboanga.—The 1918 smallpox epidemic in the Province of Zamboanga continued sporadically until November 1919, the highest number of cases recorded being 82 in the month of May. The places infected during the year were Dipolog, Dapitan, Lubungan, Zamboanga, Margosatubig, and Isabela, the last two places having registered but 3 cases without fatality, 2 in Margosatubig and 1 in Isabela. In December the entire province was clear of the disease.

Measures taken.—The instructions prescribed by the service for the prevention and control of the disease have been strictly observed. The systematic vaccination and re-vaccination has been far more intensified, especially in the Provinces of Misamis and Surigao, as required by the situation. In Misamis alone 146 emergency hospitals and isolation houses were established during the year. House quarantine has not been carried on as satisfactorily as possible on account of the inadequacy of the police force to maintain it, especially in Surigao. In Davao during the last epidemic serum therapy has been tried on several cases with encouraging results. The treatment was based upon the success of the treatment of influenza cases with the serum of convalescents in Chelsea Hospital and upon the duration of the immunity conferred to persons who had been cured of smallpox. The procedure used to obtain the serum is as follows: A person who had been cured of smallpox less than a year ago was subjected to a thorough physical and bacteriological examination. This was done to avoid contagion in case he was suffering from infectious or venereal diseases. Upon finding that he was

healthy, with previous asepsis and disinfection of the region, the blood was taken by means of a hypodermic needle previously sterilized. Usually the needle was inserted in the median Basilic vein or in the common superficial ulna. The blood while being drawn was received in a sterile centrifuge tube until a sufficient quantity was obtained; then the blood was centrifugized until all the corpuscles had settled at the bottom. Generally 20 minutes centrifuge was enough. In making the treatment the serum was used by intramuscular injection. The dose varies according to the condition of the patient. Two injections were sufficient. At least 10 c. c. was given for the first dose and 4 or 5 c. c. for the second. One case received for the first injection 25 c. c. as required by the seriousness of the case. The second dose was given two days after the first one was administered. In this province (Davao) the treatment was made in different stages of the disease and almost in all cases the result has been encouraging. The therapeutical effects of this serum therapy were the sudden drop of temperature and prompt improvement of the general condition of the patient; the eruptions became dry within four days; the secondary fever did not appear; the eruptions did not pass the pustular stage and desquamation followed. In one case the eruptions became completely dry within twelve days. All the cases that have been given the treatment did not receive any more subsequent or other treatment except daily enema to help the elimination of toxin and eye wash of boric acid solution. Complications following the treatment were completely unknown. The method is, however, still under trial and no definite conclusions can yet be presented. It is expected that within the coming year more conclusive results may be deduced.

The following table shows the number of cases and deaths registered during the year:

Smallpox registered by months.

1919	Cotabato.		Davao.		Lanao.		Misamis.	
	C. a	D. b	C. a	D. b	C. a	D. b	C. a	D. b
January	1	1	14	2	0	0	155	30
February	2	0	29	7	1	0	299	55
March	183	50	84	15	6	0	314	74
April	60	12	69	12	9	0	314	74
May	15	1	3	0	1	1	257	54
June	1	0	89	43	1	0	273	75
July	47	0	18	4	1	2	197	75
August	11	6	0	0	0	0	184	66
September	0	0	1	1	0	0	148	47
October	0	0	0	0	0	0	127	45
November	0	0	0	0	0	0	75	30
December	3	0	0	0	1	0	93	33
Total	323	70	307	84	20	3	2,436	641

Smallpox registered by months—Continued.

1919	Surigao.		Zamboanga.		Total.		Mortal- ity.
	C. ^a	D. ^b	C. ^a	D. ^b	C. ^a	D. ^b	Per cent.
January	141	35	4	2	315	70	22.22
February	160	43	4	0	495	85	17.17
March	295	40	6	0	888	179	20.15
April	134	20	52	14	638	132	20.68
May	141	21	82	23	499	100	20.04
June	194	34	41	9	599	164	27.37
July	368	67	73	17	704	165	23.43
August	371	112	34	3	600	187	31.16
September	106	49	23	6	278	103	37.05
October	224	70	38	10	389	125	32.13
November	180	60	8	5	263	95	36.12
December	75	28	0	0	172	61	35.46
Total	2,389	579	365	89	5,840	1,466	25.10

^a C = Cases.^b D = Deaths.*Smallpox reported by municipalities.*

	Cases.	Deaths. Per cent.	Mortality.
Cotabato:			
Lebak	181	44	
Glan	94	22	
Tebuan	23	1	
Diniag	14	1	
Parang	6	1	
Nuling	4	1	
Cotabato	1	0	
Total	323	70	21.67
Davao:			
Sta. Cruz	181	37	
Malita	81	41	
Davao	45	6	
Total	307	84	27.36
Lanao:			
Kalambugan	15	3	
Iligan	4	0	
Dansalan	1	0	
Total	20	3	15.00
Misamis:			
Misamis	900	169	
Jimenez	587	189	
Aloran	248	106	
Oroquieta	183	53	
Baliangao	121	36	
Catarman	105	14	
Sagay	88	20	
Plaridel	90	31	
Talisayan	62	18	
Mambajao	51	5	
Cagayan	1	0	
Total	2,436	641	26.31

Smallpox reported by municipalities—Continued.

	Cases.	Deaths. Per cent.	Mortality.
Surigao:			
Cantilan	796	233	
Dapa	470	131	
Carrascal	342	79	
Surigao	286	92	
Gigaquit	232	13	
Placer	211	24	
Bacuag	25	2	
Tandag	20	2	
Lanuza	6	3	
Tago	1	0	
Total	2,389	579	24.23
Zamboanga:			
Dipolog	279	75	
Dapitan	50	7	
Lubungan	21	5	
Zamboanga	12	2	
Margosatubig	2	0	
Isabel	1	0	
Total	365	89	24.38

MALARIA.

Malaria is doubtless the most prevalent and endemic disease in the division. Owing to the vast territory and lack of funds no radical step for the eradication of the disease was taken. The same as in previous years it contributed more than any other individual cause to swell the death statistics. Wherever malaria prevails the physical, mental and economical condition of the population thereof is generally subnormal. The disease usually runs an insidious, chronic course; the fatalities were few in comparison with the number attacked.

It appears in different forms: acute, subacute and chronic, besides the malignant type which once in a while makes its appearance. Probably several cases of the latter type were reported as typhoid or paratyphoid A or B, as their similarity is such that only through the laboratory test can the one be distinguished from the other. Almost all the cases of the malignant type, aestivo-autumnal malaria, appear or develop as typhoid with all the signs and clinical symptoms of the latter. It may be pleasing to state that since 1914, this malignant type of the disease has not made any epidemic appearance. This year it appeared in Lanao, Sulu, and Zamboanga but no deaths were recorded. The acute and subacute forms were registered else-

where, but most commonly in places near the coast. The chronic form is also common and sometimes it contributes in a high degree to the propagation of the disease.

The prevalence of malaria in this division is explained by the presence of swamps in nearly all places. All along the Cotabato River, called Rio Grande de Mindanao, the Agusan River and Lake Lanao, stagnant water is always present at any time of the year, and much more so during the rainy season when they are often overflowed. The abaca plant also contributes to the propagation of mosquitoes. The decaying pulp of the trunk and the shade afforded by the trees aid in the formation of mosquito breeding places.

The ill-effect of the disease on immigrants, who are more subject to contract the disease as shown by statistics, is a barrier to the development of agricultural regions. It is attacking all classes of people, irrespective of age, sex, and social position.

The campaign against this malady may be summed up in two principles, namely (1) destruction of mosquitoes and (2) killing the malarial germ in the human system. Its practical control involves three general lines of procedure: community, family and individual. The community method covers the destruction of the breeding places of mosquitoes by drainage, use of larvacides and more intensive cultivation of land. A greater area of land cultivated would naturally improve the drainage of the part cultivated. Also the economic state of the farmers and people generally, which makes possible better housing, living and environmental conditions and most naturally, of course, greater physical resistance.

The family protection against malaria is best typified by proper screening of the bed room or, better still, of the entire house. In default of this, mosquito bars should of course be used. The use of mosquito nets should be made compulsory. Private corporations (agricultural) should be required to furnish freely to their laborers mosquito nets.

Individuals may attain a fair degree of freedom from the disease by taking curative and prophylactic doses of quinine systematically, particularly during the mosquito-breeding season. This is the most easily applicable in this Division, but its application certainly requires a moderate appropriation. As far as the means of the Division permitted, the free distribution of quinine, especially to indigents, has been continued.

Aside from the above, the sanitation of yards, cleaning of houses and surroundings, use of mosquito fishes, preferably the *Gen. gambusia affinis*, and the establishment of residential districts on higher places free from trees and shrubs will constitute

a part of the malarial campaign. In Lanao the widening of the outlet of Lake Lanao either through the Agus or Mataling River will greatly decrease the mosquito breeding places.

Below is given a comparative table showing the number of cases registered in the dispensaries in each province:

Province.	1918.	1919.
Agusan	946	1,438
Bukidnon	132	469
Cotabato	2,512	3,154
Davao	900	1,521
Lanao	1,670	1,018
Misamis	730	" 984
Sulu	6,460	8,213
Surigao	144	45
Zamboanga	1,172	1,228
Total	14,666	18,070

Although Sulu has registered the highest number of cases, nevertheless it cannot be admitted that the province was more infected than Cotabato and Agusan which per se were very malarious. This fact can be explained in this way: More cases were registered in Sulu because the inhabitants thereof, who are mostly Mohammedans, are more accustomed to call at the hospital and dispensaries than the inhabitants of the other provinces.

The mortality-rate during 1919 was 10.40 per cent as against 12.77 per cent in 1918.

TUBERCULOSIS.

In spite of all efforts made by the personnel to have as accurate data as possible of the incidence of this disease, the number of cases recorded do not yet represent even approximately the true condition. The lack of coöperation on the part of the people and the latter's ignorance as to the value of accurate statistics are mostly responsible for this result.

This disease was endemic all over the Division. Of the cases recorded a great majority were of the pulmonary type. All classes of the inhabitants are attacked by the disease, but the incidence among the poor is rather higher than that among the well-to-do. The unbalanced diet, insanitary mode of living and overwork to which the former are subjected explains why this is so. The contamination by direct contact was easy as measures to prevent the infection have not yet been appreciated by the people, consequently infection of housemates and relatives by cases, especially those not reported, was common. Infection through dust, sneezing and coughing was also common.

Aside from the prescribed measures, education of the masses in hygiene and sanitation through social service and more active campaign against the disease, moving picture shows to demonstrate how the bacilli are introduced into the human system and the establishment of sanitariums where tubercular patients could be isolated and given adequate care and treatment, would give effective results. Coöperation of the people and private physicians is also an indispensable factor in the anti-tuberculosis campaign. The anti-spitting ordinance should be generalized and enforced.

In the Cotabato Public Hospital saccharose treatment of pulmonary tuberculosis has been tried with successful results. Three cases, all clinically and bacteriologically positive for tuberculosis, were subjected to this method of treatment. Previous to the treatment one of them was suffering from hookworm and another was having irregular afternoon or evening fever. The dose was 50 per cent solution of saccharose. Before using, the solution was first sterilized in boiling water from one-half to one hour. Two methods of injection were employed: Intramuscular and intravenous. The gluteal region was usually selected for intramuscular injection and the median basilic vein for intravenous. Both methods were done under rigid asepsis. About 10 c. c. at a time of the sterilized solution were injected intramuscularly into the buttock for ten consecutive days and then discontinued. After a week's interval the intravenous injection, with half (5 c. c.) the dose for intramuscular injection at the beginning, was given for another ten consecutive days. As the patient became used to it the dose was gradually increased up to 10 c. c. The injection was discontinued from time to time, so as to give time for the elimination of the drug. Bronzed color of the skin, especially around the eyelids, was observed on two of the cases after its prolonged use. The suprarenal glands might have been affected by the continuous use of the saccharose solution. On account of the sirupy condition of the solution, it was hard to force the piston of the syringe and the intramuscular injection caused much pain. The pain continued until the absorption of the solution, which was slow, terminated. The injection intravenously did not cause as much pain as the intramuscular injection. The injection was followed after twelve or twenty-four hours by a slight rise of temperature of the patient. In two of the case who had no temperature before the injection the temperature dropped to normal after twenty-four hours. In the interim of the injections, the patients were given tonics, such as cod liver oil, quinine, iron and strychnine pills or elixir, etc. One or two days after the last injection

tion the patients began to feel amelioration of the subjective symptoms. The cough was markedly lessened, the appetite restored and they were able to sleep well. After one month's treatment the patients gained weight, the cough practically disappeared and the bloody expectoration was never observed again. Two of the patients were admitted in July and one in August, and were all discharged in December in an apparently cured condition or at least with an arrested stage of the disease. This kind of treatment was also tried in San Ramon Penal Colony with also encouraging results. It has not yet been possible, however, to determine definitely that a radical cure of tuberculosis by the saccharose injection is possible, but the results obtained as above narrated are encouraging. It seems, however, advisable to make the experiments with non-complicated cases.

Below is given the number of cases and deaths registered during the year:

Province.	Cases.	Deaths.
Agusan	9	5
Bukidnon	3	2
Cotabato	41	10
Davao	60	7
Lanao	20	1
Misamis	62	53
Sulu	25	3
Surigao	3	8
Zamboanga	68	64
Total	291	153

DYSENTERY AND TYPHOID.

Dysentery and typhoid are endemic in various parts of Mindanao and Sulu, especially in districts where there is no adequate provision for safe source of drinking water supply. The prescribed rules for handling the cases and prevent its spread have been strictly observed.

Below is given a comparison of the number of cases and deaths recorded in 1918 and 1919:

	1918.	1919.
Dysentery:		
Cases	1,419	1,022
Deaths	520	254
Death-rate (per 100 cases).....	34.64	24.85
Incidence (per 1,000 population).....	3.21	2.22
Mortality (per 1,000 population).....	1.17	.55
Typhoid fever:		
Cases	336	286
Deaths	231	162
Death-rate (per 100 cases).....	68.75	56.64
Incidence (per 1,000 population).....	.76	.62
Mortality (per 1,000 population).....	.52	.35

INFLUENZA.

The influenza epidemic in Cotabato, Davao and Surigao was the end of the epidemic wave of 1918. In Cotabato and Surigao it was placed under control in February and in Davao in April. The mortality rate was 9.85 per cent in Cotabato, 5.94 per cent in Davao and 17.84 per cent in Surigao. In the other provinces only some isolated cases were registered during the year.

Below is given the number of cases and deaths registered during the year:

Province.	Cases.	Deaths.
Agusan	3	0
Bukidnon	31	1
Cotabato	680	67
Davao	1,177	70
Lanao	18	1
Misamis	5	5
Sulu	144	2
Surigao	454	881
Zamboanga	16	7
Total	2,528	434

LEPROSY.

While performing the routine house-to-house inspection and vaccination, a search for patients suffering from leprosy was made at the same time. The method was carried out during the year in all the provinces of this division. Two general collections were made during the year, one in April and another in November. Below is given a tabulation of the number of lepers collected and sent to Culion Leper Colony during the year:

Province.	Collect- ed.	Sent to Culion.	Died in detention house.
Agusan	2	2	0
Cotabato	37	36	1
Davao	2	2	0
Lanao	14	14	0
Misamis	18	16	2
Sulu	11	11	0
Surigao	8	7	1
Zamboanga	13	13	0
Total	105	101	4

The fact that the segregation of lepers in the Department of Mindanao and Sulu was not attempted up to 1916 for political reasons explains why they are so scattered in this division. It may be noticed that the largest number of lepers was collected in the Province of Cotabato during the year. It is worth mentioning that among the lepers sent from Cotabato is a Moham-

medan priest (hadji) who voluntarily let himself be segregated. This hadji was for several years hiding in the mountains and hills and all attempts to apprehend him resulted in vain. His attitude in so doing helped the Service not a little, because such an act served as an example which markedly changed the antagonistic attitude of the other lepers at least in that province, as proved by the fact that many more lepers have been collected thereafter. The two cases collected from Agusan are natives of Cebu who emigrated from their province in order to escape segregation. Of the cases from Davao only one is a native of that province, the others being emigrants from the Visayan islands.

The same as in previous years threats and violence have been encountered in some cases. In Sulu one life was lost. A brother of one of the lepers resisted with arms and was shot by a Constabulary soldier accompanying the collectors. The local authorities have been menaced more than once by relatives of some of the lepers.

The practice of taking Christmas holiday visitors to Culion from the provinces of the north should be extended to relatives and friends of lepers who are secluded in Culion, especially to Mohammedans, in the provinces of this division. The visitors will then have an opportunity to see the actual conditions in the Colony and to visit their relatives therein. This idea, if realized, would indubitably help to refute the general animadversion regarding conditions in the Colony, and the consequence will be that opposition to the collection of lepers will be at least lessened.

RABIES.

Only in the municipality of Dipolog, province of Zamboanga, six cases of rabies have been recorded. Six persons were bitten by truly suspected rabid dogs, but none of them died of hydrophobia. The six cases were treated with antirabic serum.

The ordinance requiring the muzzling or killing of stray dogs has been rigidly enforced. About 50 dogs were killed.

VENEREAL DISEASES.

As may be seen in the following report, the Province of Sulu has registered during the year the largest number of venereal diseases. The lack of coöperation on the part of some of the local authorities in the campaign against venereal diseases partly explains why this is so. The examination and supervision of registered prostitutes have been regularly carried out during the year. In the Zamboanga Central Laboratory 570 urethral and cervical specimens from prostitutes were examined during the

year for gonorrhea. Aside from the points already mentioned in previous reports, education of the masses as to the danger to which they are exposed and the unpleasant consequences resulting from infection would seem one of the means that would insure better results in the campaign against venereal diseases.

The following report shows the incidence of venereal diseases in this division:

Province.	Gonorrhea.	Syphilis.	Yaws.
Agusan	13	3	70
Bukidnon	0	0	0
Cotabato	80	26	13
Davao	8	5	0
Lanao	42	15	9
Misamis	26	42	0
Sulu	569	86	241
Surigao	0	0	0
Zamboanga	12	7	2
Total	750	184	335

PERTUSSIS.

Only one real outbreak of whooping cough with an autochthonous origin was recorded throughout the Division, and this was in the municipality of Baganga, province of Davao. The first case was discovered in November. The epidemic was mild in character, there being but six fatalities which were the victims of pneumonia complications. School children mostly under ten years of age suffered the most. Up to the end of the year 346 cases and 6 deaths were recorded. In the province of Misamis there were several sporadic outbreaks; 38 cases and 12 deaths were registered during the year. In Baganga, Davao, aside from the routine measures taken, the pupils suffering from the disease were excluded from school and public gatherings were prohibited.

VARIOLOID AND VARICELLA.

There were several sporadic outbreaks of these diseases in this division during the year with a mortality rate of 6.96 per 100 cases for varioloid and 2.26 per 100 cases for varicella. The majority of the cases were persons who had been vaccinated but with negative results, although there were some cases with positive vaccination.

Below is given the number of cases and deaths registered during the year:

Province.	Varioloid.		Varicella.	
	C.	D.	C.	D.
Agusan.....	1	0	84	0
Bukidnon.....	0	0	0	0
Cotabato.....	9	0	1	0
Davao.....	2	0	150	6
Lanao.....	7	0	1	0
Misamis.....	0	0	5	0
Sulu.....	1	0	5	0
Surigao.....	35	1	13	0
Zamboanga.....	47	6	8	0
Total.....	102	7	266	6

OTHER COMMUNICABLE DISEASES.

Below are given the reports during the year of other communicable diseases:

Province.	Diphtheria.		Measles.		Anthrax.		Meningitis.	
	C.	D.	C.	D.	C.	D.	C.	D.
Agusan.....	0	0	8	0	0	0	0	0
Bukidnon.....	1	0	0	0	0	0	0	0
Cotabato.....	0	0	62	0	0	0	0	0
Davao.....	0	0	0	0	2	1	1	0
Lanao.....	0	0	14	0	0	0	0	0
Misamis.....	2	2	0	0	3	3	0	0
Sulu.....	0	0	2	0	0	0	0	0
Surigao.....	0	0	0	0	0	0	0	0
Zamboanga.....	0	0	0	0	0	0	0	0
Total.....	3	2	86	0	5	4	1	0

Mortality from communicable diseases.

Year.	Total deaths.	Death from communicable diseases.	Percentage with relation to total deaths.
1918.....	17,207	8,718	50.66
1919.....	13,269	6,095	45.93

The above shows a decrease during 1919 in the number of deaths from communicable diseases.

V.

VACCINATION.

In spite of the handicaps narrated below and of the fact that the sanitary personnel has occasionally devoted part of their time in combatting small-sized epidemics, the work of vaccination has been performed as successfully as possible.

Below is shown the consolidated report of vaccination during the year:

Province.	Units used.	Total.				Percentage of positives.
		Vaccinations.	Inspections.	Positives.	Negatives.	
Agusan.....	9,500	10,024	5,713	2,491	3,222	43.60
Bukidnon.....	28,000	7,462	4,066	3,302	754	81.41
Cotabato.....	19,850	10,673	5,814	2,255	3,559	38.78
Davao.....	17,000	10,138	7,250	3,672	3,578	50.64
Lanao.....	18,000	13,404	7,843	5,434	2,409	69.28
Misamis.....	184,850	167,172	82,609	52,474	30,138	68.51
Sulu.....	10,690	7,066	6,975	5,229	1,746	74.96
Surigao.....	159,000	134,711	113,083	78,260	34,773	69.23
Zamboanga.....	37,550	32,121	21,283	12,157	9,126	57.12
Total.....	484,440	392,816	254,576	165,271	89,305	64.93

Comparatively, the work of vaccination in this division was performed more extensively than in previous years; the number of persons vaccinated during the year was almost twice as large as that of 1918; the average of positives was 64.93 per 100 vaccinated persons inspected as against 57.22 in 1918.

The geographical and topographical location of the places, the lack and irregularity of transportation, the impossibility—due to the length of time necessary for travel and the lack of constant supply of ice—to properly preserve the vaccine virus destined to remote places, especially in the Mohammedan settlements located on far-away hills and mountains, the opposition and indifference shown by the people (both Christians and non-Christians) against the measure, all served as a great handicap to the vaccination campaign in Mindanao and Sulu.

Vaccination against typhoid and paratyphoid A and B was performed on some of the hospital personnel. In Siasi and Jolo, Sulu, almost all the teachers were vaccinated.

Anti-cholera vaccine, enough for about 500 persons prepared in the Zamboanga Central Laboratory according to the standard method used in the Bureau of Science, was ready for use in the latter part of December. The work had already begun, only a very few persons having been vaccinated, when it was suspended owing to the recommendation of the Committee on Anti-cholera Vaccination to use no other vaccine except that prepared in the Bureau of Science. Accordingly, thereafter the vaccine so recommended was used.

VI.

DISPENSARIES.

At the beginning of 1919, 88 public dispensaries were in operation in the division, and during the year 15 new dispensaries were opened, giving a total of 103 in operation at the close of the year, distributed as follows:

IN CHARGE OF PHYSICIANS.

Agusan	1
Cotabato	1
Davao	3
Lanao	1
Misamis	5
Sulu	1
Surigao	4
Zamboanga	2
Total	18

IN CHARGE OF GRADUATE NURSES.

Agusan	2
Bukidnon	1
Cotabato	4
Davao	5
Lanao	1
Sulu	5
Surigao	1
Total	19

IN CHARGE OF NON-GRADUATES.

Agusan	6
Bukidnon	3
Cotabato	8
Davao	5
Lanao	8
Misamis	11
Sulu	6
Surigao	9
Zamboanga	10
Total	66
Grand total.....	103

The dispensaries are located in organized towns as well as in municipal districts and non-Christian settlements. The non-Christians have already been convinced of the good intention of the Government in establishing dispensaries in their settlements; they have already learned the benefits derived from them, as proved by the fact that in some instances they have voluntarily requested that more dispensaries be established in their rancherias and have contributed labor in the construction of the dispensary buildings. Today, especially to those living in outlying and isolated districts, the dispensary is a blessing to them. It is regrettable to have to state that in some places the request had to be denied in view of the lack of appropriation and trained personnel who could take charge of the dispensary.

Below is given the comparative number of dispensaries during 1918 and 1919:

Province.	1918.	1919.
Agusan	5	9
Bukidnon	4	4
Cotabato	13	13
Davao	7	13
Lanao	10	10
Misamis	15	16
Sulu	13	12
Surigao	9	14
Zamboanga	12	12
Total	88	103

Summary of reports of cases and treatments for 1918 and 1919.

Province.	Cases.		Treatments.	
	1918	1919	1918	1919
Agusan	3,512	4,727	5,625	7,904
Bukidnon	1,017	617	1,017	696
Cotabato	22,045	18,626	63,102	62,074
Davao	3,127	4,876	10,937	16,072
Lanao	7,745	5,616	14,854	12,258
Misamis	4,007	4,646	8,020	19,948
Sulu	25,219	24,925	45,875	49,500
Surigao	714	467	714	846
Zamboanga	7,456	4,992	14,352	12,669
Total	74,842	69,492	164,496	181,917

^a Up to November 30, 1919.

It may be noticed from the above that there was a decrease in the number of cases and an increase in the number of treatments. This fact clearly explains that the inhabitants have already learned the benefits derived from dispensaries so that they have made more calls for treatment.

VII.

HOSPITALS.

One of the noteworthy features of the work of this Division is the hospital service. The first hospital, the Lanao Public Hospital, was inaugurated in March, 1914, followed by the Sulu Public Hospital in November, 1915, and by the Cotabato Public Hospital in November, 1917, etc. At the close of the year the following named hospital were in operation:

1. Butuan Public Hospital, Butuan, Agusan.
2. Cotabato Public Hospital, Cotabato, Cotabato.
3. Davao Public Hospital, Davao, Davao.
4. Lanao Public Hospital, Camp Keithley.
5. Misamis Provincial Hospital, Cagayan, Misamis.
6. Sulu Public Hospital, Jolo, Sulu.
7. Rizal Memorial Hospital, Dapitan, Zamboanga.
8. Zamboanga General Hospital, Zamboanga.

At the beginning the hospital encountered difficulties among the Mohammedans that seemed insurmountable, but through tact, assiduity and actual work said difficulties have been at last obviated. Many prominent Mohammedans have already submitted themselves not only to modern medical treatment, but also to surgical operations. Mohammedan women are now accustomed to stay in the hospitals during confinement, a fact contrary to their old custom to be attended by nobody except women in their parturition. Mohammedans, after having stayed and received treatment in the hospitals, communicate to their fellowmen the benefits they have enjoyed in the institution and, thereafter, they become the most enthusiastic aids in the introduction of modern sanitation among their kinsmen.

From the standpoint of progress in the development of constituted government in the Mohammedan and pagan regions of the South, the Government hospitals are of fundamental importance in the public service and in the policy of attraction. Furthermore, a hospital is a factor of great economic value in itself and has far reaching influence in conserving and augmenting the natural man-power; that is, it helps considerably to increase the population.

BUTUAN PUBLIC HOSPITAL.

The Butuan Public Hospital, occupying a temporary old building of mixed material, was formerly under the management of the Central Office, but when the former Department of Health of the Department of Mindanao and Sulu was incorporated into the general service its administration automatically passed over to the chief of division. Equipped with a laboratory and the necessary facilities, the hospital has a capacity of 12 beds, but this number has been often exceeded during the year to meet as far as possible the public demand.

At the close of the year the hospital had the following personnel:

- 1 Supervising physician.
- 1 Resident physician.
- 1 Superintendent and property clerk.
- 2 Nurses.
- 4 Ward attendants.
- 4 Helpers.
- 1 Cook.

A modern concrete building to which the hospital will be transferred permanently and which is much larger than the present one is nearing completion and will probably be inaugurated within the second quarter of 1920.

Hospital cases.

Number and diagnosis.	Remaining from last report.	Admitted.	Operations.	Dressings.	Discharged.	Died.	Remaining.
1. Typhoid fever.....		1				1	
4. Malaria.....		82			77	3	2
6. Measles.....		1			1		
8. Whooping cough.....		9			6	3	
9. Diphtheria and croup.....		1			1		
10. Influenza.....		1			1		
14. Dysentery.....		8			6	2	
19. Other epidemic diseases.....		1			1		
27. Beriberi.....		4			4		
28. Tuberculosis of the lungs.....		2			2		
34. Tuberculosis of other organs.....		5	5	23	5		
36. Rickeets.....		3			2	1	
47. Acute articular rheumatism.....		1			1		
48. Organic rheumatism and gout.....		1			1		
54. Anemia chlorosis.....		1			1		
69. Epilepsy.....		1			1		
73. Neuralgia neuritis.....	1	3			4		
74. Other diseases of the nervous system.....		2			2		
78. Acute endocarditis.....		2			2		
79. Organic diseases of the heart.....		2			2		
83. Diseases of the veins (varices, hemorrhoids, phlebitis, etc.).....		1			1		
84. Diseases of the lymphatic system (lymphangitis, etc.).....		1	1		1		
89. Acute bronchitis.....		3			3		
91. Broncho pneumonia.....		4			2	2	
92. Pneumonia.....	1	1			2		
93. Pleurisy.....		3			3		
94. Pulmonary congestion, pulmonary apoplexy.....		1			1		
99. Diseases of the mouth and annexe.....		2	1		1		1
103. Other diseases of the stomach (cancer excepted).....		4			4		
105. Diarrhea and enteritis.....		8			7	1	
107. Intestinal parasites.....		5			5		
108. Appendicitis and typhilitis.....		2	2	1	1	1	
109. Hernia, intestinal obstructions.....		1	1	25	1		
110. Other diseases of the intestines.....		3	1		3		
113. Cirrhosis of the liver.....		2				2	
115. Other diseases of the liver.....		1			1		
117. Simple peritonitis (nonpuerperal).....		1				1	
120. Bright's disease.....		2			2		
127. Nonvenereal diseases of the male genital organs.....		2	2	71	2		
128. Uterine hemorrhage (nonpuerperal).....		1	1		1		
130. Other diseases of the uterus.....		2			2		
132. Salpingitis and other diseases of the female genital organs.....		1			1		
135. Puerperal hemorrhage.....		1			1		
137. Puerperal septicaemia.....		1				1	
142. Gangrena.....		1	1		1		
143. Furuncle.....		2	2	11	2		
144. Acute abscess.....		8	6	23	8		
145. Other diseases of the skin and annexe.....		3	1	14	3		
146. Diseases of the bones (tuberculosis excepted).....		1	1		1		
147. Diseases of the joints (tuberculosis and rheumatism excepted).....	1				1		
149. Other diseases of the organs of locomotion.....		2	1		2		
170. Traumatism by firearms.....		1				1	
171. Traumatism by cutting or piercing instruments.....		3			3		
185. Fractures (cause not specified).....		3			2		
186. Other external violence.....		10	1		10		
189. Cause of death not specified or ill-defined.....		4			4		
Total.....	3	222	27	168	202	19	3

Summary and miscellaneous.

Total number of patients admitted.....	221
Total number of visits by out-patients.....	3,320
Average visits by out-patients per day.....	9
Clinics:	
Medical.....	177
Surgical.....	41

Summary and miscellaneous—Continued.

Clinics—Continued.

Dental	1
Obstetrical	2

Nationalities of patients:

Filipinos—	
Christians	212
Non-Christians	8
European	1

Sex of patients:

Male	177
Female	44

Classes of service:

Charity	104
Government pay.....	69
Private pay.....	48

Operations performed:

Minor—	
Filipinos (Christians).....	69
Major—	
Filipinos (Christians).....	10
Filipino (Non-Christian).....	1

Operations performed:

Minor—	
Charity	39
Private pay.....	30
Major—	
Charity	7
Private pay	3
Government pay	1

Prescriptions filled:

Charity	570
Private pay.....	1,535

Number of outside calls made by medical staff.....	124
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Statement of Hospital Accounts.

	Debit.	Credit.
Allowance for subsistence of patients.....		₱1,649.99
Allowance for subsistence of personnel.....		1,583.75
Expenditures for subsistence of patients and personnel	₱2,692.63	
Collections		3,442.18
Total	2,692.63	6,675.92
Balance		3,983.29

COTABATO PUBLIC HOSPITAL.

Situated on the slope of a hill from 50 to 70 feet above sea level with picturesque environment, the Cotabato Public Hospital housed in a building of strong material, was inaugurated on November 5, 1917. It has three private rooms and two general wards which will accomodate at least 25 patients. It

is equipped with an operating and a sterilizing room, laboratory and pharmacy. Forming the right and left wings, respectively, the nurses' and physicians' quarters are connected to the main building with a bridge. Back of the hospital is the morgue. Attached to the buildings are three tanks for storing rain water which the hospital is using for drinking purposes.

The hospital personnel at the close of the year was as follows:

- 1 Supervising physician.
- 1 Resident physician.
- 1 Superintendent and property clerk.
- 3 Nurses.
- 4 Ward attendants.
- 6 Helpers.
- 2 Cooks.

Hospital cases.

Number and diagnosis.	Remaining from last report.	Admitted.	Operations.	Dressings.	Discharged.	Died.	Remaining.
1. Typhoid fever.....	1	4			3	2	
2. Malaria.....	1	122			116	4	3
5. Smallpox.....		1		2	1		
6. Measles.....		6			6		
8. Whooping cough.....	1	10			10		1
9. Diphtheria and croup.....		2			1	1	
10. Influenza.....	10	27			36		1
12. Asiatic cholera.....		3			3		
14. Dysentery.....		11			10	1	
19. Other epidemic diseases.....		13		19	13		
27. Beriberi.....		5			4	1	
28. Tuberculosis of the lungs.....		17			16	1	
29. Acute-miliary tuberculosis.....		1			1		
30. Tuberculosis meningitis.....		1				1	
31. Abdominal tuberculosis.....		1			1		
33. White swelling.....		2	1	2	2		
34. Tuberculosis of other organs.....		1	1	1	1		
37. Syphilis.....		1	1	2	1		
38. Gonococcus infection.....		7		6	6		1
40. Cancer and other malignant tumors of the stomach and liver.....		3			2	1	
43. Cancer and other malignant tumors of the breast.....		1		1	1		
44. Cancer and other malignant tumors of the skin.....	1				1		
45. Cancer and other malignant tumors of other organs and of organs not specified.....		1		2	1		
46. Other tumors (tumors of the female genital organs excepted).....		1	1	2	1		
47. Acute articular rheumatism.....		1		1	1		
48. Chronic rheumatism and gout.....		2		1	2		
53. Leuchæmia.....		1			1		
54. Anemia chlorosis.....	1	2			3		
61. Simple meningitis.....		1				1	
64. Cerebral hemorrhage apoplexy.....		1			1		
66. Paralysis without specified cause.....		3			2		1
69. Epilepsy.....		2			2		
72. Chorea.....		2			2		
73. Neuralgia and neuritis.....		7			7		
75. Diseases of the eyes and their annexa.....		6	3	6	6		
82. Embolism and thrombosis.....		1			1		
83. Diseases of the veins (varices, hemorrhoids, phlebitis, etc.).....		2		1	2		
84. Diseases of the lymphatic system (lymphangitis, etc.).....		2	1	2	2		
86. Diseases of the nasal fossæ.....		8	1	1	8		
89. Acute bronchitis.....		8			3		
91. Broncho pneumonia.....		8			3	5	
92. Pneumonia.....	1	4			5		
93. Pleurisy.....		5	3	7	4		1

Hospital cases—Continued.

Number and diagnosis.	Remaining from last report.	Admitted.	Operations.	Dressings.	Discharged.	Died.	Remaining.
96. Asthma		2			2		
98. Other diseases of the respiratory system (tuberculosis excepted)		1			1		
99. Diseases of the mouth and annexe	1	1			1	1	
103. Other diseases of the stomach (cancer excepted)		9			9		
104. Diarrhea and enteritis (under 2 years)	1	4			4	1	
105. Diarrhea and enteritis (2 years and over)		6			6		
106. Ankylostomiasis	1	2			3		
107. Intestinal parasites	1	2			2		
108. Appendicitis and typhlitis		4	6	12	4		
110. Other diseases of the intestines		2	1	1	2		
115. Other diseases of the liver		2			2		
119. Acute nephritis		2			2		
120. Bright's disease		3			3		
123. Calculi of the urinary passages		1			1		
124. Diseases of the bladder		3	1	1	2		1
127. Nonvenereal diseases of the male genital organs		1		1	1		
130. Other diseases of the uterus		10	3	6	9		1
133. Nonpuerperal diseases of the breast (cancer excepted)		2	2	2	2		
134. Accident of pregnancy		4			1		
136. Other accidents of labor	1	9		6	9		1
137. Puerperal septichæmia		1			1		
138. Puerperal albuminuria and convulsions		1			1		
144. Acute abscess		9	4	14	9		
145. Other diseases of the skin and annexe		4		5	4		
149. Other diseases of the organs of locomotion		1		2	1		
150. Congenital malformations (stillbirths not included)		1	1	1	1		
151. Congenital debility, icterus and sclerema		1			1		
160. Suicide by cutting or piercing instruments		1	1		1		
165a. Venomous bites and stings		1			1		
167. Burns (conflagration excepted)		2		2	1		1
170. Traumatism by firearms		2	1	3	2		
171. Traumatism by cutting or piercing instruments		9	2	11	8	1	
175. Traumatism by other crushing (vehicles, railways, landslides, etc.)		3		3	2		1
183. Homicide by cutting or piercing instrument		7	2	14	6	1	
185. Fractures (cause not specified)		5	2	7	5		
186. Other external violence	1	7		10	7	1	
Total	22	432	38	158	417	23	13

Summary and miscellaneous.

Total number of patients admitted during the year	432
Total number of visits by out-patients	6,558
Average visits of out-patients per day	17

Clinics:

Medical	321
Surgical	91
Obstetrical	14
Eye, ear, nose and throat	6

Nationalities of patients:

Filipinos—	
Christians	320
Non-Christians	95
Asiatics	5
Americans	5
Chinese	5
Japanese	1
European	1

Summary and miscellaneous—Continued.

Sex of patients:		
Males		299
Females		133
Classes of service:		
Official pay		43
Government pay		27
Private pay		29
Charity		333
Operations performed:		
Minor—		
Filipinos—		
Christians		115
Non-Christians		62
Chinese		2
Asiatic		1
Major—		
Filipinos—		
Christians		7
Non-Christians		4
Operations performed:		
Minor—		
Charity		165
Private pay		14
Official pay		1
Major—		
Charity		10
Official pay		1

Statement of hospital accounts.

Allowance for subsistence of patients.....		₱2,696.05
Allowance for subsistence of personnel.....		2,321.80
Expenditures for subsistence of patients and personnel	₱4,401.06	
Collections		3,959.02
Total		4,401.06
Balance		8,976.87
		4,575.81

DAVAO HOSPITAL.

On account of the pressing public demand caused principally by the influx of emigrants to Davao the service was not able to wait for the permanent concrete hospital building now nearing completion and which is expected to be opened to the public in 1920, and opened a temporary public hospital, using the Bureau of Public Works laborers' sickward whose operation was completely turned over to the Philippine Health Service. It was provided with the necessary equipment and facilities, including one laboratory. The concrete building, when completed, can render better accommodation to as many as 50 patients.

Hospital personnel at the close of the year:

- 1 Supervising physician.
- 1 Resident physician.
- 1 Superintendent and property clerk.
- 3 Nurses.
- 4 Ward attendants.
- 5 Helpers.
- 2 Cooks.

Hospital cases.

Number and diagnosis.	Remaining from last report.	Admitted.	Operations.	Dressings.	Discharged.	Died.	Remaining.
1. Typhoid	1	2				2	1
4. Malaria	14	241	1	1	210	37	8
5. Smallpox		2			2		
10. Influenza	2	35			28	9	
12. Asiatic cholera		62			49	13	
14. Dysentery	2	25			19	8	
17. Leprosy		3					3
18. Erysipelas		1					1
20. Purulent infection and septicaemia		2	1	9		2	
27. Beriberi		20			12	8	
28. Tuberculosis of the lungs		9			4	4	1
30. Tuberculosis meningitis		1			1		
36. Rickets		1				1	
37. Syphilis		1					1
38. Gonococcus infection	14	1	50	12			2
54. Anemia, chlorosis	3			3			
55. Other general diseases	1				1		
64. Cerebral haemorrhage, apoplexy	1				1	1	
68. Other forms of mental alienation	1						
75. Diseases of the eyes and their annexa	1	1	4	1			
83. Diseases of the veins (varices, hemorrhoids, phlebitis, etc.)		1			1		
89. Acute bronchitis	1				1		
90. Chronic bronchitis	2				2		
96. Asthma	1				2		
99. Diseases of the mouth and annexa	1				1		
100. Diseases of the pharynx	1				1		
101. Diseases of the oesophagus	1				1		
103. Other diseases of the stomach (cancer excepted)	14				13		
104. Diarrhea and enteritis (under two years)	1					1	
105. Diarrhea and enteritis (2 years and over)	1				1		
106. Ankylostomiasis	2				2		
107. Intestinal parasites	1				1		
101. Other diseases of the intestines	1					1	
113. Cirrhosis of the liver	1				1		
115. Other diseases of the liver	4				3	1	
119. Acute nephritis	3					3	
120. Bright's disease	1					1	
144. Acute abscess	1					1	
145. Other diseases of the skin	3			20			
147. Diseases of the joints	1			30	3		
171. Traumatism by cutting or piercing	9				1		
172. Traumatism by fall	1			274	9		
175. Traumatism by other crushing	1						1
186. Other external violence	1	1	15		1	1	
189. Causes of death not specified or ill-defined	5				4		1
Total	19	486	5	403	390	96	19

Summary and miscellaneous.

Total number of patients admitted during the year	486
Total number of visits by out-patients	2,977
Average visits of out-patients per day	8.1
Clinics:	
Medical	144
Surgical	25

Summary and miscellaneous—Continued.

Clinics—Continued.

Eye, ear, nose, and throat.....	2
Obstetrical	15

Nationalities of patients:

Filipinos—	
Christians	445
Non-Christians	14
American	1
Japanese	24
European	1
Others	1

Sex of patients:

Male	375
Female	111

Classes of service:

Charity	213
Government free.....	199
Private pay.....	74

Operations performed:

Minor—	
Filipinos (Christians).....	10
Major—	
Filipinos (Christians).....	4

Operations performed:

Minor—	
Charity	8
Government free.....	1
Private pay.....	1
Major—	
Charity	4

Prescriptions filled:

Charity	996
Government free.....	759

Number of outside calls made by hospital staff.....	312
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*Statement of hospital account.**(September to December.)*

Allowance for subsistence of patients.....	₱2,385.22	
Allowance for subsistence of personnel.....	805.00	
Expenditures for subsistence of patients and personnel..	₱1,905.69	
Collections		1,806.16
 Total	1,905.69	1,806.16
Balance		3,090.96

LANAO PUBLIC HOSPITAL.

The Lanao Public Hospital at Dansalan with a capacity of 25 beds was inaugurated on March 10, 1914. In view of the inadequacy of the building to meet the increasing demand by both the Christian and Non-Christian population, it became

imperative to transfer the hospital to another and more spacious building. On May 1, 1919, the transfer to the former military hospital building at Camp Keithley, which is very much larger and more appropriate for a hospital than the Dansalan building, was effected. Nestled at the foot of the signal hill amid the picturesque mountains of Lanao whose climate rivals even that of famous Baguio, the present Lanao Public Hospital is perhaps the most unique in the whole Archipelago for its site. It has accommodation for 48 patients. The hospital was reorganized and divided into five departments, namely, administrative, medical, surgical, kitchen, and information. It has six private rooms and two general wards, one for male and the other for female patients. A building contiguous to the main office is assigned for operating, sterilizing and dressing purposes. Aside from its modern equipment and facilities, including a jitney ambulance, the hospital also counts with an up-to-date laboratory.

In order to have a constant supply of experienced attendants, a training school for ward attendants under the management of the hospital staff was inaugurated on December 1.

Hospital personnel at the close of the year:

- 1 Supervising physician.
- 1 Resident physician.
- 1 Superintendent and property clerk.
- 4 Nurses.
- 4 Ward attendants.
- 5 Helpers.
- 2 Cooks.

Hospital cases.

Number and diagnosis.	Remaining from last report.	Admitted.	Operations.	Dressings.	Discharged.	Died.	Remaining.
1. Typhoid fever	1	4			2	3	
4. Malaria	6	176			177	2	3
5. Smallpox		1			1		
6. Measles		7			7		
8. Whooping cough		18			16	1	1
10. Influenza	1	11			12		
14. Dysentery		35			32	3	
18. Erysipelas	1	2			3		
19. Other epidemic diseases		7		57	4		3
20. Purulent infection and septicaemia		13		71	12	1	
22. Anthrax		1			1		
23. Rabies		1					
27. Beriberi		6			5	1	
28. Tuberculosis of the lungs	1	63			62		2
31. Abdominal tuberculosis		1	1	1		1	
33. White swelling		1		25	1		
34. Tuberculosis of other organs		13	10	97	13		
37. Syphilis		10			10		
38. Gonococcus infection		15	2	13	15		
40. Cancer and other malignant tumors of the stomach and liver		1	1	25	1		

Hospital cases—Continued.

Number and diagnosis.	Remaining from last report.	Admitted.	Operations.	Dressings.	Discharged.	Died.	Remaining.
42. Cancer and other malignant tumors of the female genital organs		2			2		
45. Cancer and other malignant tumors of other organs and of organs not specified		1	1	10	1		
46. Other tumors (tumors of the female genital organs expected)	1	5	5	26	6		
47. Acute articular rheumatism		2			2		
48. Chronic rheumatism and gout		11			11		
54. Anemia chlorosis	6	125			131		
55. Other general diseases		1			1		
63. Other diseases of the spinal cord		1			1		
68. Other forms of mental alienation		5			5		
69. Epilepsy		3			3		
73. Neuralgia and neuritis		4			4		
74. Other diseases of the nervous system		7			7		
75. Diseases of the eyes and their annexa		20	5	15	20		
76. Diseases of the ears		3			3		
79. Organic diseases of heart		6			6		
81. Diseases of the arteries, atheroma, aneurism, etc		4			4		
83. Diseases of the veins (varices, hemorrhoid, phlebitis, etc.)		4	2	3	4		
84. Diseases of the lymphatic system (lymphangitis, etc.)		3	3	34	2		1
86. Diseases of the nasal fossae		2			2		
88. Diseases of the thyroid body		1			1		
89. Acute bronchitis		27			26		1
90. Chronic bronchitis		1			1		
91. Broncho pneumonia	1	10			11		
92. Pneumonia	2	5			6	1	
96. Asthma		5			5		
99. Diseases of the mouth and annexa		20	8		20		
100. Diseases of the pharynx	2	12	8		14		
102. Ulcer of the stomach		4			3		1
103. Other diseases of the stomach (cancer excepted)		43			43		
105. Diarrhea and enteritis (2 years and over)		5			2	3	
106. Ankylostomiasis		20			20		
107. Intestinal parasites		184			169		15
108. Appendicitis and typhilitis	1	8	2	20	7	1	1
109. Hernia, intestinal obstructions		4	4	51	4		
110. Other diseases of the intestines	1	7			8		
114. Biliary calculi		1			1		
115. Other diseases of the liver		1			1		
117. Simple peritonitis (non-puerperal)		2				2	
119. Acute nephritis		7			7		
120. Bright's disease		5			4	1	
122. Other diseases of the kidneys and annexa		1			1		
123. Calculi of the urinary passages		1	1	16	1		
124. Diseases of the bladder		7			7		
127. Non-venereal diseases of male genital organ		4	3	37	4		
130. Other diseases of the uterus		19	4	5	19		
132. Salpingitis and other diseases of the female genital organ		5			5		
134. Accidents of pregnancy	1	10	2	4	11		
135. Puerperal hemorrhage		2			2		
136. Other accidents of labor		9		6	9		
137. Puerperal septichaemia		2			1	1	
140. Following childbirth (not otherwise specified)		4		21	4		
141. Puerperal diseases of the breast		1	1	22	1		
143. Furuncle		13	12	93	13		
144. Acute abscess		11	10	41	11		
145. Other diseases of the skin and annexa	3	100		66	94		9
148. Amputation		1	1	31	1		
152. Other diseases peculiar to early infancy		1		9	1		
164. Poisoning of food		3			2	1	
165a. Venomous bites and stings		1			1		
167. Burns (conflagration excepted)		1		6	1		
170. Traumatism by firearms		3	2	26	3		
171. Traumatism by cutting or piercing instruments		1		5	1		
183. Homicide by cutting or piercing instruments		4		37	3		1
185. Fractures (cause not specified)		1			1		
186. Other external violence	2	18	3	125	19	1	
188. Sudden death		1		6	1		
Total	30	1,191	91	1,004	1,159	24	39

Summary and miscellaneous.

Total number of patients admitted during the year.....	879
Total number of visits by out-patients.....	1,343
Average visits of out patients per day.....	3.3
Clinics:	
Medical	975
Surgical	158
Eye, ear, nose, and throat.....	36
Dental	10
Obstetrical	13
Nationalities of patients:	
Filipinos—	
Christians	705
Non-Christians	132
Americans	29
Chinese	5
Japanese	6
European	1
Others	1
Sex of patients:	
Male	472
Female	407
Classes of service:	
Charity	537
Government pay.....	138
Government free.....	113
Private pay.....	91
Operations performed:	
Minor—	
Filipinos—	
Christians	80
Non-Christians	2
Americans	7
Major—	
Filipinos—	
Christians	14
Non-Christian	1
Operations performed:	
Minor—	
Charity	70
Government free.....	6
Government pay.....	8
Private pay.....	5
Major—	
Charity	13
Private pay.....	2
Prescriptions filed:	
Charity	203
Government free.....	240
Private pay.....	225
Number of outside calls made by the hospital staff.....	51

Statement of Hospital Accounts.

	Debit.	Credit.
Allowance for subsistence of patients.....		₱4,009.00
Allowance for subsistence of personnel.....		3,731.60
Expenditures for subsistence of patients and personnel	₱6,635.00	
Collections		4,726.41
Total	6,635.00	12,467.01
Balance		5,832.01

MISAMIS PROVINCIAL HOSPITAL.

Housed in a building of mixed material with nipa roof, the Misamis Provincial Hospital was opened on October 1, 1917. It has one general ward and a private room. In spite of the inadequacy and condition of the building its admissions during the year were almost double those of last year.

The hospital force during the year consisted of the following:

- 1 Supervising physician.
- 1 Resident physician.
- 1 Superintendent and property clerk.
- 2 Nurses.
- 1 Midwife.
- 2 Ward attendants.
- 1 Cook.

Hospital cases.

Diagnosis.	Remaining from last report.	Admitted.	Operations.	Dressings.	Discharged.	Died.	Remaining.
1. Typhoid fever		4			2	2	
4 Malaria	1	58			58		1
8. Whooping cough		2			1	1	
10. Influenza		1			1		
14. Dysentery		12			12		
27. Beriberi	1	8			9		
34. Tuberculosis of other organs		1			1		
37. Syphilis		8		231	8		
38. Gonococcus infection		7	1	95	7		
47. Acute articular rheumatism		1			1		
48. Chronic rheumatism and gout		2			2		
54. Anemia, chlorosis		2			2		
64. Cerebral hemorrhage apoplexy		1		3			1
73. Neuralgia and neuritis		3			3		
74. Other diseases of the nervous system		4			4		
75. Diseases of the eyes and their annexa		2		10	2		
76. Diseases of the ears		1		3	1		
79. Organic diseases of the heart		1			1		
83. Diseases of the veins (varices hemorrhoids, phlebitis, etc.)		1			1		
92. Pneumonia		5			5		
94. Pulmonary congestion, pulmonary apoplexy		5			5		
96. Asthma		1			1		
97. Diarrhea emphysema		1			1		
104. Diarrhea and enteritis (under two years)	1	1			1	1	
105. Diarrhea and enteritis (2 years and over)		8			8		
107. Intestinal parasites		23			23		
108. Appendicitis and typhlitis		2			2		
111. Acute yellow atrophy of the liver		1			1		

Hospital cases—Continued.

Diagnosis.	Remaining from last report.	Admitted.	Operations.	Dressings.	Discharged.	Died.	Remaining.
115. Other diseases of the liver.....		1				1	
118. Other diseases of the digestive system (cancer and tuberculosis excepted).....		3			3		
122. Other diseases of the kidneys and annexa.....		1			1		
124. Diseases of the bladder.....		1			1		
130. Other diseases of the uterus.....		2			1		1
134. Accidents of pregnancy.....		1			1		
140. Following childbirth (not otherwise defined).....		1			1		
144. Acute abscess.....	25			500	24		1
145. Other diseases of the skin and annexa.....	8	1		60	7	1	
146. Diseases of the bones (tuberculosis excepted).....		1			1		
147. Diseases of the joints (tuberculosis and rheumatism excepted).....		2		30	2		
165a. Venomous bites and stings.....		1			1		
166. Conflagration.....		1				1	
171. Traumatism by cutting or piercing instruments.....		7	2	131	6	1	
172. Traumatism by fall.....		7		107	6		1
175. Traumatism by other crushing (vehicles, railways, landslides, etc.).....		2		25	2		
176. Injuries by animals.....		1	1		1		
185. Fractures (cause not specified).....		1		70	1		
186. Other external violence.....		3		24	2		1
Total.....	3	235	5	1,289	224	8	6

Summary and miscellaneous.

Total number of patients admitted during the year.....	246
Total number of visits by out-patients.....	11,424
Average visits of out-patients per day.....	31

Clinics:

Medical	180
Surgical	62
Eye, ear, nose, and throat.....	2
Obstetrical	2

Nationalities of patients:

Filipinos—	
Christians	238
Non-Christians	2
Chinese	6

Sexes of patients:

Male	173
Female	73

Classes of service:

Charity	149
Government pay	31
Government free	12
Private pay	54

Operations performed:

Minor—	
Filipinos—	
Christians	59
Non-Christians	3
Chinese	2

Summary and miscellaneous—Continued.

Operations performed—Continued.

Major—	
Filipinos—	
Christian	1
Operations performed:	
Minor—	
Charity	17
Government free	8
Government pay	2
Private pay	37
Major—	
Charity	1
Prescriptions filled:	
Charity	621
Government free	430
Government pay	53
Private pay	1,501
Number of outside calls made by hospital staff.....	219

SULU PUBLIC HOSPITAL.

On November 7, 1915, the Sulu Public Hospital was officially inaugurated. Located at Jolo, commonly known outside to be the land of cut-throats and the so-called "juramentado" and generally considered the center of the non-Christian population in the South, the Sulu Public Hospital has done and is doing not a little in convencing the Mohammedans to accept Government undertakings. It has gained such a foothold among both the Christian and non-Christians that oftentimes its present accommodation is inadequate to accept all patients applying for admission. With two general wards, one for female and the other for the male patients, and four private rooms the hospital can accommodate as many as 40 patients. It is fairly equipped with up-to-date appliances, including a laboratory, and is supplied with electric light; either rain or distilled water is used for drinking purposes. In September the jitney car for the hospital arrived; it is of distinct utility for bringing patients to the hospital.

Hospital personnel:

- 1 Supervising physician.
- 1 Resident physician.
- 1 Assistant resident physician and bacteriologist.
- 1 Superintendent and property clerk.
- 3 Nurses.
- 1 Midwife.
- 1 Dispensary attendant.
- 3 Ward attendants.
- 5 Helpers.
- 2 Cooks.

Among the treatments employed in this hospital during the year were: (1) intravenous injection of hexamethylenamine. This proved successful in several cases of broncho-pneumonia, and also in arresting the acute symptoms of a few cases of tuberculosis and likewise in certain acute general infections; (2) intravenous injection of antibacillary serum with excellent results; (3) intravenous injections of sodium salicylate in an intractable case of acute articular rheumatism with successful result; (4) treatment of typhoid fever by means of vaccine; of all the cases treated not one ended fatally; (5) and the use of chenopodium oil in uncinariasis.

Hospital cases.

Number and diagnosis.	Remaining from last report.	Admitted.	Operations.	Dressings.	Discharged.	Died.	Remaining
1. Typhoid fever.....	1	14			15		
3. Conjunctivitis, gonorrheal.....		1		30	1		
4. Malaria, unclassified.....	3	175			176		2
4. Malaria, East, autumn.....		1			1		
4. Malaria, tertian.....		3			3		
4. Malaria, quartan.....		1			1		
4. Malaria, chronic.....		1			1		
4. Malaria, splenomegaly.....		13		4	12		1
6. Measles.....		2			2		
8. Whooping cough.....		1			1		
10. Influenza.....	1	15			16		
14. Dysentery, unclassified.....		7			7		
14. Dysentery, amœbic.....		4			4		
14. Dysentery, balantidic.....		1			1		
14. Dysentery, bacillary.....		3			3		
19. Yaws, primary.....		25	1	394	25		
19. Yaws, secondary.....		5		108	5		
19. Yaws, tertiary.....		2		25	2		
20. Infected wounds.....		20		215	19		1
24. Tetanus.....		1		30	1		
27. Beriberi, adult.....	2	8			10		
27. Beriberi, infantile.....	1	6			7		
27. Beriberi, chronic.....		1			1		
28. Pulmonary tuberculosis.....		9			9		
28. Pulmonary tuberculosis, incipient.....		1			1		
28. Laryngitis, T. B.....		1			1		
31. Tuberculosis, intestinal.....		1			1		
34. Abscess, chronic.....		1		11	1		
37. Syphilis, primary.....		6		7	6		
37. Syphilis, secondary.....		5	1	16	5		
37. Syphilis, tertiary.....		1		13			1
37. Chancre, venereal.....		4		16	4		
38. Urethritis, gonorrheal.....		23	1	155	23		
38. Endometritis, gonorrheal.....		15	13	82	15		
38. Salpingitis, gonorrheal.....		1			1		
38. Ophthalmia, gonorrheal.....		3		9	3		
38. Vaginitis, gonorrheal.....		4			4		
38. Adenitis, purulent.....		1		2	1		
38. Orchitis, gonorrheal.....		2			2		
39. Osteosarcoma, cheek.....		1			1		
38. Cervicitis, gonorrheal.....		2		39	2		
46. Lipoma, head.....	1				1		
46. Sebaceous cyst.....		4	3	18	4		
46. Lipoma, left leg.....		1	1	13	1		
47. Rheumatism, articular, acute.....		3			2		1
48. Rheumatism, chronic.....		2			2		
54. Anemia.....		2			2		
54. Anemia, pernicious.....		1			1		
55. Poisoning, petroleum.....		1			1		
59. Opium habit.....		9			6		3
59. Gastritis, chronic.....		1			1		
64. Cerebral hæmorrhage.....		1			1		

Hospital cases—Continued.

Number and diagnosis.	Remaining from last report.	Admitted.	Operations.	Dressings.	Discharged.	Died.	Remaining.
69. Dementia, precox		1			1		
69. Epilepsy		1			1		
73. Hysteria		4			4		
73. Neuritis		3			3		
73. Peripheral neuritis		2			2		
73. Neuralgia		12			12		
74. Neurasthenia		3			3		
74. Diver's paralysis		2		15	2		
75. Gloucoma		1			1		
75. Conjunctivities		6		23	6		
75. Sty		1		7	1		
75. Elepharitis		1			1		
75. Tracuma, bilateral		1		3	1		
75. Pterygium		4	4	64	4		
75. Cataract, senile		1		1	1		
75. Chalazion		1	1	4	1		
75. Alopecia areata		2			2		
76. Otitis externa		1		4	1		
78. Myocarditis		1			1		
79. Mitral regurgitation		2			2		
79. Mitral stenosis		1			1		
79. Mitral insufficiency		2			2		
80. Angina pectoria		2			2		
83. Hemorrhoids		2	2	15	2		
83. Varicose veins		1			1		
84. Abscess, axilla		1		27	1		
84. Adenitis, chronic		1	1	13	1		
85. Palpitation		1			1		
85. Epistaxis		1			1		
87. Laryngitis		1			1		
89. Bronchitis		8			8		
89. Bronchitis, acute		13			13		
90. Bronchitis, subacute		1			1		
91. Broncho-pneumonia		5			5		
92. Lobar pneumonia		1			1		
93. Pleurisy		3			3		
93. Pleurisy with effusion		3	4	4	3		
96. Pulmonary congestion		1			1		
96. Asthma		1			1		
96. Bronchial asthma		16			16		
98. Hemoptisis		1			1		
99. Stomatitis		1			1		
99. Ulcerative stomatitis		1			1		
93. Abscess, alveolar		2		6	2		
100. Tonsillitis, suppurative		1	1		1		
100. Tonsillitis, acute		1			1		
100. Pharyngitis, acute		4			4		
102. Gastric ulcer		2			2		
103. Indigestion		16			16		
103. Gastritis, catarrhal, acute		6			6		
103. Gastralgia		1			1		
103. Dilation of the stomach		1			1		
104. Enteritis		1					1
104. Gastro-enteritis		14			13	1	
104. Dyspepsia		1			1		
104. Intestinal intoxication		1			1		
106. Uncinariasis		8			8		
107. Ascariasis		19			19		
108. Appendicitis, acute		8	6	83	8		
108. Appendicitis, chronic		3	2	26	3		
110. Constipation		14			14		
110. Fistula in-ano		1		12	1		
114. Biliary calculi		1			1		
115. Cholecystitis, acute		8	1	98	7	1	
115. Cholangitis		1			1		
117. Peritonitis		1	1			1	
117. Adhesion, post operation appendix		1			1		
120. Nephritis		5			5		
123. Calculus, urethral	1		1	2	1		
123. Renal colic		1			1		
123. Renal calculus		2			2		
125. Urethral fistula		1	1	78	1		
125. Stricture, urethral		1			1		
126. Prostatitis, acute		1		26	1		
127. Popilloma, penis		3	2	57	3		
127. Hdyrocele		3	4	59	3		
127. Orchitis		2		8	2		

Hospital cases—Continued.

Number and diagnosis.	Remaining from last report.	Admitted.	Operations.	Dressings.	Discharged.	Died.	Remaining.
127. Circumcision		2	2	20	1		1
129. Nyoma, uterine		1			1		
130. Retroversion, uterus		2	3	80	2		
130. Pelvic cellulitis		1			1		
131. Ovarian cysts		1	1	16	1		
132. Salpingitis		6	1	53	6		
132. Hydrosalpinx		1			1		
132. Pyosalpinx		1			1		
133. Abscess mammary		1		5	1		
134. Pregnancy	1	4			4		1
134. Miscarriage		2			2		
134. Abortion inevitable		1	1	8	1		
136. Nursery	1	40	3	181	39	1	1
136. Parturition		3	1	10	3		
136. Parturition, normal	1	32		116	32		1
138. Toxemia of pregnancy		2			2		
138. Pregnancy, ectopic		1	1	24	1		
140. Puerperium		6			6		
141. Mastitis		2		6	2		
142. Fissure, left nipple		1			1		
143. Carbuncle		2	1	25	2		
144. Abscess		16			16		
144. Abscess, left leg		1	8	98	1		
144. Abscess, scalp		1		2	1		
144. Abscess, buttock		2	2	13	2		
145. Dermatitis		3		40	3		
145. Elephantiasis		1		4	1		
145. Eczema		1		3	1		
145. Urticaria		3			3		
145. Dermatitis, herpetiformis		1	1	40	1		
145. Tinea imbricata	1	9		45	10		
145. Ingrown toe nail		1	1	3	1		
145. Scabies		7		53	7		
145. Tropical ulcer		6		51	5		1
145. Hyperopia		1			1		
146. Periostitis		2		17	2		
147. Corneal ulcer		5		62	5		
147. Arthritis, chronic		2		23			2
150. Harelip		3	3	21	3		
151. Malnutrition		3			2	1	
151. Emaciation		1			1		
151. Abortion		3	2	18	3		
151. Miscarriage		1		10	1		
152. Prolonged labor		1	1	20	1		
152. Infection, cord		1		4	1		
154. Senile debility		1			1		
155. Poisoning, accidental		1			1		
162. Drowning		1			1		
163. Gastritis, acute		3			3		
167. Burns		1		15	1		
167. Burns, first degree		1		3	1		
170. Wounds, gun shot		6	1	189	6		
171. Wounds, incised	2	20		309	19	2	1
171. Punctured		5		46	5		
172. Sprains		1		1	1		
172. Sprains, right ankle		1		15	1		
175. Wound, crushed		2		58	2		
179. Sunstroke		1			1		
183. Wounds, stab		7		65	7		
185. Dislocation, hip joint		3			3		
185. Fracture, arm		3	2	3	2		1
185. Fracture, neck humerus		1		7	1		
185. Fracture, Colle's		1			1		
185. Fracture, right arm		1		10	1		
185. Fracture, second carpal bone		1		2	1		
186. Wound, contused		7		28	7		
186. Bruise		1		2	1		
186. Contusion		5		2	5		
186. Dog bite		1			1		
186. Lacerated wound		3	1	39	3		
186. Abrasion		1		3	1		
187. Ascites		2		20	2		
189. Insomnia		1			1		
Total	16	939	84	3,735	929	7	19

Summary and miscellaneous.

Total number of patients admitted during the year.....	939
Total number of visits by out-patients.....	19,318
Average visits of out-patients per day.....	53
Total number of Mohammedans treated.....	7,290
Clinics:	
Medical	474
Surgical	158
Eye, ear, nose and throat.....	25
Obstetrical	55
Pediatrics	184
Genito-urinary	43
Nationalities of patients:	
Christian Filipinos	432
Mohammedan Filipinos	368
Americans	9
Chinese	58
Japanese	36
Europeans	1
Others	35
Sex of patients:	
Male	586
Female	353
Classes of service:	
Charity	632
Government pay	167
Private pay	140
Operations performed:	
Minor—	
Christian Filipinos	145
Mohammedan Filipinos	240
Americans	5
Chinese	64
Japanese	14
Others	5
Major—	
Christian Filipinos	19
Mohammedan Filipinos	10
Americans	2
Chinese	2
Japanese	4
Europeans	1
Operations performed:	
Minor—	
Charity	335
Government pay	53
Private pay	85
Major—	
Charity	19
Government pay	12
Private pay	7

Summary and miscellaneous—Continued.

Prescriptions filled:

Charity	2,079
Government pay	1,042
Private pay	949
Number of outside calls made by hospital medical staff....	805

Statement of hospital accounts.

	Debit.	Credit.
Allowance for subsistence of patients.....		₱6,833.60
Allowance for subsistence of personnel.....		1,926.60
Expenditures for subsistence of patients and personnel	₱7,013.91	
Collections		8,288.05
Total	7,013.91	17,048.25
Balance		10,034.34

RIZAL MEMORIAL HOSPITAL.

Housed in the same building where Doctor Rizal was quartered during the first three months of his exile at Dapitan, which building was repaired and embellished, the Rizal Memorial Hospital was inaugurated in December, 1916. It has beautiful environment with ample ground surrounding it. It has one male and one female ward wherein 24 patients can be accommodated. It is provided with a laboratory.

The hospital personnel at the close of the year consisted of the following:

- 1 Supervising physician.
- 1 Resident physician.
- 1 Superintendent and property clerk.
- 1 Nurse.
- 1 Midwife.
- 1 Dispensary attendant
- 1 Ward attendant.
- 3 Helpers.
- 1 Cook.

Hospital cases.

Number and diagnosis.	Remaining from last report.	Admitted.	Operations.	Dressings.	Discharged.	Died.	Remaining.
1. Typhoid fever		9			8	1	
3. Relapsing fever		2			2		
4. Malaria		43			43		
6. Measles		1			1		
10. Influenza		5			5		
14. Dysentery		4			5	1	1
27. Beriberi		2			2		
28. Tuberculosis of the lungs		4			4		
31. Abdominal tuberculosis		1	1	1	1		

Hospital cases—Continued.

Number and diagnosis.	Remaining from last report.	Admitted.	Operations.	Dressings.	Discharged.	Died.	Remaining.
34. Tuberculosis of other organs.....		1		6	1		
38. Gonococcus infection.....		2		8	2		
41. Cancer and other malignant tumors of the peritoneum, intestines and rectum.....		1			1		
46. Other tumors (tumors of the female genital organs excepted).....		1	1	10	1		
47. Acute articular rheumatism.....		2			2		
51. Exophthalmic goitre.....		1			1		
54. Anemia chlorosis.....		1			1		
55. Other general diseases.....		1			1		
61. Simple meningitis.....		2				2	
64. Cerebral hemorrhage apoplexy.....		2			2		
73. Neuralgia and neuritis.....		3			3		
74. Other diseases of the nervous system.....		1			1		
75. Diseases of the eyes and their annexa.....		2		6	2		
84. Diseases of the lymphatic system (lymphangitis, etc.).....		3			3		
86. Diseases of the nasal fossae.....		4	1	1	3		1
89. Acute bronchitis.....		1			1		
90. Chronic bronchitis.....		4			4		
92. Pneumonia.....		1			1		
93. Pleurisy.....		1	1		1		
94. Pulmonary congestion, pulmonary apoplexy.....		2			2		
96. Asthma.....		2			2		
99. Diseases of the mouth and annexa.....		3			3		
100. Other diseases of stomach (cancer excepted).....		9			9		
104. Diarrhea and enteritis (under two years).....		7			5	1	1
105. Diarrhea and enteritis (2 years and over).....		6			6		
106. Ankylostomiasis.....		20			20		
107. Intestinal parasites.....		123			121		2
108. Appendicitis and typhilitis.....		3			3		
109. Hernia, intestinal obstructions.....		4			4		
110. Other diseases of the intestines.....		1			1		
115. Other diseases of the liver.....		7			7		
119. Acute nephritis.....		1			1		
120. Bright's diseases.....		5			5		
127. Nonvenereal diseases of the male genital organs.....		1		2	1		
128. Uterine hemorrhage (nonpuerperal).....		2			2		
130. Other diseases of the uterus.....		5	1	32	5		
134. Accidents of pregnancy.....		6			6		
135. Puerperal hemorrhage.....		11	1	2	1		
136. Other accidents of labor.....		62	1	10	59		3
143. Furuncle.....		2		4	2		
144. Acute abscess.....		44	4	74	4		
145. Other diseases of the skin and annexa.....		4			4		
150. Congenital malformations (stillbirths not included).....		2	2	18	2		
151. Congenital debility, icterus and sclerema.....		60	1	10	57		3
152. Other diseases peculiar to early infancy.....		2	1		2		
164. Poisoning of food.....		1			1		
171. Traumatism by cutting or piercing instruments.....		2			2		
179. Effects of heat.....		1			1		
185. Fractures (cause not specified).....		2	1	1	2		
186. Other external violence.....		1			1		
Total.....		459	16	185	443	5	11

Summary and miscellaneous.

Total number of patients admitted during the year.....	317
Total number of visits by out-patients.....	2,776
Average visits of out-patients per day.....	6

Clinics:

Medical.....	135
Surgical.....	33
Eye, ear, nose, and throat.....	2
Obstetrical.....	65
Pediatrics.....	82

Summary and miscellaneous—Continued.

Nationalities:

Filipinos—

Christians 315

Non-Christians 1

Chinese 1

Sex of patients:

Male 128

Female 189

Classes of service:

Charity 117

Government pay 33

Private pay 167

Operations performed:

Minor—

Filipinos (Christians) 13

Major—

Filipinos (Christians) 1

Operations performed:

Minor—

Charity 4

Government pay 1

Private pay 8

Major—

Charity 1

Prescriptions filled:

Charity 562

Government pay 209

Private 1,871

Number of outside calls made by hospital staff 23

Statement of hospital accounts

	<i>Debit.</i>	<i>Credit.</i>
Allowance for subsistence of patients.....		₱967.77
Allowance for subsistence of personnel.....		1,144.30
Expenditures for subsistence of patients and personnel	₱1,583.63	
Collections		3,769.37
Total	1,583.63	5,881.44
Balance		4,297.81

ZAMBOANGA GENERAL HOSPITAL.

The Zamboanga General Hospital, situated in the heart of the city of Zamboanga, the capital of the former Department of Mindanao and Sulu, was opened to the Public on September 1, 1918. It consists of seven separate buildings; namely, the two main concrete edifices, one of which was inaugurated in 1920 and is connected with the other by a bridge, the contagious disease pavilion, the nurses' dormitory, the kitchen, the garage and the morgue with a concrete disinfecting tank. The nurses'

dormitory, the kitchen, and the contagious diseases pavilion at the back of the main buildings are connected with the latter by a bridge. In front of this group of buildings is the hospital lawn in the form of a half moon, in the center of which stands majestically an artificially made concrete fountain with its octagonal tank. In the main buildings there are two general wards, one for male and the other for female patients, and four private rooms for two patients each. Excepting the contagious diseases pavilion whose bed capacity is 20, this hospital has regular accommodation for 40 patients, but in case of necessity this number can be doubled by using the surrounding porch as was done in the first main building during the year. It has up-to-date equipment; two motor ambulances, one for general and the other for contagious diseases, and an automobile are at its disposal. The Zamboanga Central Laboratory is doing all the examination work for the hospital.

During its sixteen months of existence, the hospital has gained such a foothold which no other hospital in this division has acquired during so short a period. Its mission was well and promptly understood and greatly appreciated by the community as evidenced by the considerable increasing number of patients, without counting those patients who, to the regret of the hospital staff, were either refused admittance or referred to the private hospitals for lack of accommodations.

Personnel at the close of the year:

- 1 Supervising physician, who is at the same time the resident physician.
- 1 Bacteriologist, who is at the same time the bacteriologist of the Zamboanga Central Laboratory.
- 1 Superintendent and property clerk.
- 1 Chief nurse.
- 6 Nurses.
- 3 Ward attendants.
- 2 Cooks.
- 2 Chauffeurs.
- 1 Gardener.
- 6 Helpers.

Hospital cases.

Number and diagnosis.	Remaining from last report.	Admitted.	Operations.	Dressings.	Discharged.	Died.	Remaining.
1. Typhoid fever	1	12	-----	-----	10	3	-----
4. Malaria	2	140	-----	-----	141	-----	1
5. Smallpox	-----	6	-----	-----	6	-----	-----
8. Whooping cough	-----	1	-----	-----	1	-----	-----
10. Influenza	4	62	-----	-----	65	-----	-----
12. Asiatic cholera	-----	10	-----	-----	7	-----	-----

Hospital cases—Continued.

Number and diagnosis.	Remaining from last report.	Admitted.	Operations.	Dressings.	Discharged.	Died.	Remaining.
14. Dysentery		12			11		
18. Erysipelas		1		5	1		
19. Other epidemic diseases		12		45	7		
20. Purulent infection and septicaemia	1	3		58	4		
27. Beriberi	1	12		6	10		
28. Tuberculosis of the lungs		22		10	17		
31. Abdominal tuberculosis		5	1	22	5		
33. White swelling		4		10	4		
34. Tuberculosis of other organs		10	2	146	9	1	
37. Syphilis		2	1	37	2		
38. Gonococcus infection	1	7	1	26	8		
42. Cancer and other malignant tumors of female genital organs		2	1	4	2		
44. Cancer and other malignant tumors of the skin		1		50	1		
45. Cancer and other malignant tumors of other organs and of organs not specified		2	2	50	2		
46. Other tumors (tumors of the female genital organs excepted)		1	1	10	1		
47. Acute articular rheumatism		9			9		
48. Chronic rheumatism and gout		1			1		
50. Diabetes		3			1		
54. Anemia chlorosis		3			3		
61. Simple meningitis		1			1		
63. Other diseases of the spinal cord		3			3		
64. Cerebral hemorrhage apoplexy		1				1	
68. Other forms of mental alienation		4			4		
69. Epilepsy		1				1	
73. Neuralgia and neuritis	2	25			27		
74. Other diseases of the nervous system	1	5			6		
75. Diseases of the eyes and their annexa		9	1	16	9		
76. Diseases of the ears	1	7		18	8		
78. Acute endocarditis		3		1	1	2	
79. Organic diseases of heart		10			6	4	
80. Angina pectoris		1			1		
83. Diseases of the veins (varices, hemorrhoids, phlebitis, etc.)		4	3	37	3	1	
84. Diseases of the lymphatic system (lymphangitis, etc.)		9	4	112	8		1
85. Hemorrhage, other diseases of the circulatory system		5			4	1	
86. Diseases of the nasal fossae		6	3	33	6		
87. Diseases of the larynx		1			1		
89. Acute bronchitis	2	35			37		
90. Chronic bronchitis		18			18		
92. Pneumonia	1	11			10	2	
93. Pleurisy	1	5	2	42	6		
94. Pulmonary congestion, pulmonary apoplexy		2			2		
96. Asthma		12			12		
99. Diseases of the mouth and annexa		20	16	18	20		
100. Diseases of the pharynx		7	2	1	7		
102. Ulcer of the stomach		3			3		
103. Other diseases of the stomach (cancer excepted)		27			26	1	
104. Diarrhea and enteritis (under 2 years)	2	41		5	39	4	
105. Diarrhea and enteritis (2 years and over)		35			34	1	
106. Ankylostomiasis		79			79		
107. Intestinal parasites	1	148			149		
108. Appendicitis and typhlitis		24	19	334	21	2	1
109. Hernia, intestinal obstruction	1	5	3	93	5		1
110. Other diseases of the intestines		3			3		
115. Other diseases of the liver		3			2		1
116. Diseases of the spleen		2			2		
117. Simple peritonitis (nonpuerperal)		7	6	43	5	2	
119. Acute nephritis		19			16	3	
120. Bright's disease		7			7		
122. Other diseases of the kidneys and annexa	1	2	2	37	3		1
123. Calculi of the urinary passages		1					1
124. Diseases of the bladder		6			6		
127. Nonvenereal diseases of the male genital organs	1	27	15	218	27		1
129. Uterine tumor (non-cancerous)		2			2		
130. Other diseases of the uterus	1	27	22	107	28		
131. Cysts and other tumors of the ovary		6	6	12	6		
132. Salpingitis and other diseases of the female genital organs		4	4	32	4		
134. Accidents of pregnancy	1	40	1	48	38		3
136. Other accidents of labor	1	34	3	14	32		3

Hospital cases—Continued.

Number and diagnosis.	Remaining from last report.	Admitted.	Operations.	Dressings.	Discharged.	Died.	Remaining.
137. Puerperal septichæmia		6	2	18	4	1	1
138. Puerperal albuminuria and convulsions		2			2		
140. Following childbirth (not otherwise defined)		2			2		
142. Gangrene		2		52	2		
143. Furuncle	2	14	8	193	15		1
144. Acute abscess	2	32	27	332	32		2
145. Other diseases of the skin and annæxa		20	4	210	17		3
146. Diseases of the bones (tuberculosis excepted)		2	2	42	2		
147. Diseases of the joints (tuberculosis and rheumatism excepted)	1			28	1		
149. Other diseases of the organs of locomotion		1			1		
150. Congenital malformations (stillbirths not included)		2	2	20	2		
151. Congenital debility, icterus, and sclerema		11	3	33	10	1	
152. Other diseases peculiar to early fancy		2		2	2		
154. Senility		2			2		
159. Suicide by firearms		1		18	1		
164. Poisoning by food		2			2		
165a. Venomous bites and stings		1			1		
167. Burns (conflagration excepted)	1	5		46	6		
169. Accidental drowning		1			1		
171. Traumatism by cutting or piercing instruments	1	29	2	116	30		
172. Traumatism by fall		6		65	6		
175. Traumatism by other crushing (vehicles, railways, landslides, etc.)	2	2	2	60	4		
179. Effects of heat		3			3		
185. Fractures (cause not specified)		13	3	90	13		
186. Other external violence		35	11	447	28	1	6
187. Ill-defined organic diseases		1			1		
Total	36	1295	187	3472	1255	42	34

Summary and miscellaneous.

Total number of patients admitted during the year	955
Total number of visits made by out-patients per day	3,640
Average visits by out-patients per day	9.97
Clinics:	
Medical	559
Surgical	252
Obstetrical	42
Pediatrics	82
Eye, ear, nose, and throat	20
Nationalities:	
Filipinos (Christians)	853
Filipinos (Non-Christians)	28
Japanese	39
Chinese	27
Other nationalities	8
Sexes:	
Males	647
Females	308
Classes of service:	
Charity	231
Government pay	263
Private pay	461

Summary and miscellaneous—Continued.

Operations:	
Major	66
Minor	118
Prescriptions filled:	
Charity	520
Government pay	424
Private pay	39
Number of deliveries attended by district nurses.....	539
Total number of visits made by hospital staff.....	463

Statement of hospital account.

	Debit.	Credit.
Allowance for subsistence of patients.....		₱6,292.40
Allowance for subsistence of personnel.....		3,789.69
Expenditures for subsistence of patients and personnel	₱7,483.54	
Collections		15,077.07
Total	7,483.54	25,159.16
Balance		17,675.62

Comparative hospital reports for 1918 and 1919.

Hospital.	Admission.		Died.		Operations.				Collections.	
	1918	1919	1918	1919	Major.		Minor.		1918	1919
					1918	1919	1918	1919		
Butuan Public Hospital	191	221	16	19	8	11	175	69		₱3,442.18
Cotabato Public Hospital.....	339	432	17	23	12	11	153	180	₱4,075.87	3,959.02
Davao Public Hospital		486		96		5		10		₱1,199.92
Lanao Public Hospital	751	879	13	24	14	15	104	89	3,886.92	4,726.41
Misamis Public Hospital	125	246	6	8	0	1	1	64		
Sulu Public Hospital	721	939	19	7	20	38	405	473	7,509.52	8,288.05
Zamboanga General Hospital.....	^b 309	955	^b 38	42	^b 8	66	^b 48	118	^b 2,130.21	15,077.07
Rizal Memorial Hospital.....	306	817	10	5	3	1	6	13	2,077.32	3,769.37
Total	2,742	4,475	119	224	65	148	892	1,016	19,679.84	40,462.02

^a From September to December only.^b Was inaugurated on September 1, 1918.

VIII.

LABORATORIES.

There was no change in the number of laboratories in this division during the year. They are located one in each of the Provinces of Agusan, Cotabato, Lanao, Misamis, Sulu, and Surigao and two in each of the Provinces of Davao and Zamboanga.

Laboratory examinations performed during the year:

Agusan laboratory:

Blood	56
Urine	73
Stools	73
Sputum	15
Discharges	10

Total	227
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*Laboratories—Continued.***Cotabato laboratory:**

Blood	280
Urine	191
Stools	278
Sputum	38
Discharges	131

Total	918
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Davao laboratories:

Blood	176
Urine	50
Stools	1,651
Sputum	39
Discharges	1,568

Total	3,474
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Lanao laboratory:

Blood	20
Urine	543
Stools	543
Sputum	4
Discharges	27
Nasal secretion	5

Total	1,142
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Misamis laboratory:

Blood	30
Urine	92
Stools	498
Sputum	24
Discharges	227

Total	871
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Sulu laboratory:

Blood	51
Urine	506
Stools	547
Sputum	23
Discharges	65

Total	1,192
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Surigao laboratory:

Blood	7
Urine	1
Stools	3
Sputum	1

Total	12
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Rizal Memorial Hospital laboratory:

Blood	15
Urine	163

Laboratories—Continued.

Rizal Memorial Hospital laboratory—Continued.

Stools	194
Sputum	6
Discharges	4
Total	382
Zamboanga central laboratory:	
Water	288
Blood	88
Urine	326
Stools	4,115
Sputum	62
Discharges	590
Anti-cholera vaccine	426
Surgical pathology	7
Autogenous vaccine	5
Transfusion	5
Sacchrose injections	4
Chemical	3
Total	5,919

Comparative number of examinations performed during 1918 and 1919:

	1918.	1919.
Agusan laboratory	597	227
Cotabato laboratory	578	918
Davao laboratory	1,952	3,474
Lanao laboratory	1,056	1,142
Misamis laboratory	2,862	871
Sulu laboratory	1,049	1,192
Surigao laboratory		12
Rizal Memorial Hospital laboratory.....	355	382
Zamboanga central laboratory.....	1,912	5,919
Total	10,361	14,137

The Zamboanga Central Laboratory at Zamboanga is the central laboratory for the division. Since November 1, it has been under the direction of Dr. Cristobal Manalang, ex-assistant professor in bacteriology and pathology in the University of the Philippines. On December 1, a circular was issued to all district health officers of this division, informing them that, aside from the routine bacteriological examinations, the Zamboanga Central Laboratory is also equipped to perform Wassermann, Widal, precipitin and other clinical laboratory tests, examine tumors and other tissues, such as those removed from post-mortem cases and prepare autogenous and prophylactic vaccines. With a Leitz microtome which was received about the close of the year, histo-pathological sections for examination can now be

properly prepared. Sufficient equipment is on hand to prepare anticholera vaccine in sufficient quantities for 1,000 persons every month. Requisitions from the other provinces for vaccines, sera, reagents, cultures, etc., have been filled in this laboratory. The cholera carrier survey has been continued throughout the year.

IX.

WATER SUPPLY.

There are many sources of water supply in this division either for drinking or domestic purposes. These sources can be divided into groups: Sanitary water and doubtful or probably polluted water. To the first group belongs the stored rain water, well kept and exempted from pollution or contamination, distilled water, water from artesian wells or sanitary dug wells and water from reservoirs; in the second group can be included the stream, lake and surface well water.

Distilled water can be found only in the provincial capitals and in some localities, such as Kolambugan, Province of Lanao, and on the other large plantations in Davao, where there are ice-plants in operation. On account of its cost only well-to-do people are using it.

Stored rainwater is used by both the common and well-to-do people.

During the year only 3 artesian wells were drilled, 2 in Agusan and 1 in Davao, making the number of such wells in this division 24 in all, distributed as follows: Agusan 21, Davao 1, Lanao 1, and Misamis 1. As already mentioned in previous reports, the perforation of artesian wells in this division could not be done in all the provinces of this division due to the geological formation of some of them and to the lack of funds in general.

The municipality of Lianga inaugurated its water supply system, while the municipalities of Bacuang and Placer, Province of Surigao, are expecting to inaugurate theirs in 1920.

From 60 to 80 per cent of the population depend upon the second group of water sources. The exposure to pollution and contamination of these sources explains the incidence of intestinal parasites and other water-borne diseases.

The Pasonanca reservoir from which the City of Zamboanga and adjoining barrios are supplied with water is regularly cleaned at least once a month and the bacteriological examination of its water is made once a week. The following were the findings of the examinations made during the year:

Zamboanga Central Laboratory.

	Number of samples.	Positive.	Negative.
Presumptive test	32	3	29
Attempt to isolate <i>B. coli</i>	32	1	31
<i>Amoeba</i>	32	7	25
<i>Ciliates</i>	32	18	14
<i>Flagellates</i>	32	28	4
Number of colonies per c. c.....	From 30 to 1,300		

DISPOSAL OF EXCRETA.

Three approved systems for the disposal of excreta are in use in this division, the pail, septic tank, and the Antipolo systems.

The pail system is the one most generally used in the majority of the organized municipalities which have ordinances adopting the system.

In the whole division only 37 septic tanks were in use at the close of the year. Its use could not be generalized because the cost of its construction is prohibitive for the general public.

In spite of all opposition encountered, the campaign for the generalization of the use of the Antipolo system of toilets has been carried on more intensively than in previous years. At the close of the year there were in force in regularly organized municipalities of this division, 49 ordinances adopting this system while 13 more were pending. The geographical situation of some places in several provinces makes impracticable the establishment of this system in said places. The following table shows the number of Antipolo toilets in this division:

Province.	At the close of 1918.	Built during 1919.	Total at the end of 1919.
Agusan	28	1,368	2,196
Bukidnon	1	67	58
Cotabato	165	308	473
Davao	40	299	339
Lanao	2	28	30
Misamis	5,436	2,978	8,414
Surigao	7,364	7,684	15,048
Zamboanga	1,207	341	1,548
Total	15,043	13,073	28,166

XI.**VITAL STATISTICS.**

Vital statistics may be considered a barometer by which can be judged the sanitary condition of a place or community. Any deviation from its natural course with a tendency to rise will be a warning to the sanitarians for an immediate investigation. But, before vital statistics can best serve the purpose for which

they are collected, it is important and necessary that they be as complete as possible.

In Mindanao and Sulu the incompleteness of the data collected may be principally attributed to: (1) the noncoöperation of both Christians and non-Christians in general based on their ignorance as to the sanitary value of vital statistics; the lack of the necessary personnel to emphasize the importance of complete statistical data and to record them, especially in the non-Christian districts where in most of them the municipal officials are illiterate, greatly retards their education on this line; (2) and the official toleration of the celebration of marriages and baptism among Mohammedans by their priests who do not make any official record of them; they also bury their dead in their own cemeteries without Governmental authority. However, in time of epidemics all efforts are made to register as far as practicable all deaths among them, especially from communicable diseases.

Comparative marriage rate per 1,000 population.

Province.	Number of marriages.		Rate.	
	1918	1919	1918	1919
Agusan.....	170	335	15.13	16.02
Bukidnon.....	56	149	5.30	14.23
Cotabato.....	64	60	12.96	12.10
Davao.....	287	372	13.61	17.64
Lanao.....	89	47	11.78	5.65
Misamis.....	^a 1,504	^b 808	22.68	12.18
Sulu.....	5	17	.43	1.47
Surigao.....	995	^c 713	21.32	19.04
Zamboanga.....	655	553	16.08	14.00
Total.....	3,825	3,104	17.34	13.91

^a Up to September 30 only.

^b Up to June 30 only.

^c Up to September 30 only.

Comparative birth-rate per 100 population.

Province.	Number of births.		Rate.	
	1918	1919	1918	1919
Agusan.....	605	504	26.92	12.05
Bukidnon.....	567	534	27.08	25.51
Cotabato.....	313	278	31.71	28.03
Davao.....	932	1,010	22.10	23.97
Lanao.....	181	147	11.97	8.84
Misamis.....	^b 6,181	^a 3,627	46.61	27.35
Sulu.....	237	107	10.24	4.62
Surigao.....	2,163	^b 1,506	23.17	18.79
Zamboanga.....	1,008	1,044	12.37	13.21
Total.....	12,187	8,757	27.62	19.39

^a Up to June 30 only.

^b Up to September 30 only.

Births reported.

Province.	Ameri- cans.	Filipinos.	Euro- peans.	Chinese.	Other Asiatics.	Total.
Agusan.....		504				504
Bukidnon.....		534				534
Cotabato.....		277		1		278
Davao.....		1,005		3	2	1,010
Lanao.....		144	1	1	1	147
Misamis ^a		3,627				3,627
Sulu.....	1	101		5		107
Surigao ^b		1,506				1,506
Zamboanga.....	5	1,038			1	1,044
Total.....	6	8,736	1	10	4	8,757

^a Up to June 30 only.^b Up to September 30 only.*Comparative death-rate per 100 population.*

Province.	Number of deaths.		Rate.	
	1918	1919	1918	1919
Agusan.....	854	464	38.00	11.10
Bukidnon.....	346	436	16.52	20.82
Cotabato.....	277	141	28.06	14.22
Davao.....	1,547	1,930	36.68	45.76
Lanao.....	382	154	25.28	9.26
Misamis.....	^b 5,829	^a 3,625	43.95	27.33
Sulu.....	237	170	10.24	7.35
Surigao.....	2,402	^b 1,749	25.73	21.83
Zamboanga.....	2,262	1,368	27.76	17.31
Total.....	14,136	10,037	39.01	28.87

^a Up to June 30 only.^b Up to September 30 only.*Causes of deaths reported.*

Number and diagnosis.	Agusan.	Bukidnon.	Cotabato.	Davao.	Lanao.	Misamis. ^a	Sulu.	Surigao. ^b	Zamboanga.	Total.
1. Typhoid fever.....	1	3	1	13	5	56	2	7	13	101
2. Typhus fever.....		8				6				14
3. Relapsing fever.....		15						7	1	23
4. Malaria.....	151	63	14	598	24	729	33	253	247	2,112
4a. Malaria cachexia.....	6		2	49	10	1	3	6	25	102
5. Smallpox.....			13	112		368		547	80	1,120
6. Measles.....				2						2
7. Scarlet fever.....		1								1
8. Whooping cough.....	1	13	6	14	3	32		18	3	90
8. Diphtheria and croup.....		3	1			5		2		11
9a. Croup.....						1		20		21
10. Influenza.....	1	80	2	318	1	111		31	86	606
11. Miliary fever.....	1	1			1			55	1	59
12. Asiatic cholera.....				32		120			7	159
13. Cholera nostras.....								8		8
14. Dysentery.....	13	57	6	80	6	67	4	107	63	403
15. Yellow fever.....		1								1
17. Leprosy.....				2						2
18. Erysipelas.....				1	1	55				57
19. Other epidemic diseases.....	16			1		1				18
20. Purulent infection and septi- cæmia.....					1	2			14	17
22. Anthrax.....				1		13			1	15
23. Rabies.....					2	1				3
24. Tetanus.....		10	2	3			1		1	17
27. Beriberi.....	15	30	4	69	3	226	20	46	109	522
28. Tuberculosis of the lungs.....	24	14	15	51	10	232	13	88	71	518
29. Acute military tuberculosis.....				1		1		3	2	7
30. Tuberculosis meningitis.....				1		1		7		9
31. Abdominal tuberculosis.....		4	1		1			3	1	10

^a Up to June 30 only.^b Up to September 30 only.

Causes of deaths reported—Continued.

Number and diagnosis.	Agusan.	Bukidnon.	Cotabato.	Davao.	Lanao.	Misamis. ^a	Sulu.	Surigao. ^b	Zamboanga.	Total.
32. Pott's diseases									1	1
33. White swelling						20			1	21
34. Tuberculosis of other organs		9				5	2	1	3	20
35. Disseminated tuberculosis				1						1
36. Rickets	3		1			3		2	5	14
37. Syphilis	1			1		1				3
38. Gonococcus infection						2	1		1	4
39. Cancer and other malignant tumors of the buccal cavity					1	9	2	1		13
40. Cancer and other malignant tumors of the stomach and liver			1	2		4		1	4	12
42. Cancer and other malignant tumors of the female genital organs						1				1
43. Cancer and other malignant tumors of the breast		1								1
44. Cancer and other malignant tumors of the skin						9		2	3	14
45. Cancer and other malignant tumors of other organs and organs not specified		2								2
46. Other tumors (tumors of the female genital organs excepted)									1	1
47. Acute articular rheumatism		1		11		6		6	4	28
48. Chronic rheumatism and gout	3	2	1	2	1	7		4	2	22
49. Scurvy				1		23				24
50. Diabetes				1						1
51. Exophthalmic goitre								6		6
52. Addison's diseases								35		35
53. Leuchaemia				1					1	2
54. Anaemia chlorosis	6	3		2	1	3	1	7	5	28
55. Other general diseases	26			27		1	7	8	1	70
56. Alcoholism (acute or chronic)				4						4
60. Encephalitis								1		1
61. Simple meningitis		1		8	1	4		5	7	26
61a. Meningitis, cerebro-spinal epidemic	1		2	2			1			6
63. Other diseases of the spinal cord					1					1
64. Cerebral hemorrhage apoplexy	1	4	1	3		2	3	4	6	24
65. Softening of the brain								3	3	6
66. Paralysis without specified cause		10		2		4			6	22
67. General paralysis of the insane		2								2
68. Other forms of mental alienation						1			3	4
69. Epilepsy		4			2	57			2	65
70. Convulsions (non-puerperal)	8			3		6	1	17		35
71. Convulsion of infants	47	10	3	28	6	394	6		124	618
72. Chorea				25						25
73. Neuralgia and neuritis		3		7					1	11
74. Other diseases of the nervous system						2	1		2	5
75. Diseases of the eyes and their annexa				1		2				3
76. Diseases of the ears		3								3
77. Pericarditis				2						2
78. Acute endocarditis	3			4					7	14
79. Organic diseases of the heart	1	1		5	3	6	3	3	12	34
80. Angina pectoris				1				1	3	5
82. Embolism and thrombosis							1			1
83. Diseases of the veins (varices, hemorrhoids, phlebitis, etc.)	1			1						2
84. Diseases of the lymphatic system (lymphangitis, etc.)		1						1		2
85. Hemorrhage, and other diseases of the circulatory system	1			1	1	1			3	7
87. Diseases of the larynx						3				3
88. Disease of the thyroid body								20		20
89. Acute bronchitis			7	48	3	97		33	21	209
90. Chronic bronchitis	9	2		7		66	1	12	9	106
91. Broncho-pneumonia	24		9	7	5	75	5	1	20	146
92. Pneumonia	5	5		23	4	36			5	78
93. Pleurisy		1		1					1	3
94. Pulmonary congestion, pulmonary apoplexy					1				1	2
96. Asthma	2	4	1	22	3	9		14	8	63

^a Up to June 30 only.^b Up to September 30 only.

Causes of deaths reported—Continued.

Number and diagnosis,	Agusan.	Bukidnon.	Cotabato.	Davao.	Lanao.	Misamis. ^a	Sulu.	Surigao. ^b	Zamboanga.	Total.
97. Pulmonary emphysema	3			2					2	7
98. Other diseases of the respiratory system (tuberculosis excepted)	1							1	2	4
99. Diseases of the mouth and annexa	1		1	1	2					5
100. Diseases of the pharynx					1				2	3
101. Diseases of the oesophagus								1	1	2
102. Ulcer of the stomach				2		9		37	3	51
103. Other diseases of the stomach (cancer excepted)	3	6		22	1	7	1	25	10	75
104. Diarrhea and enteritis (under 2 years)	12	6	3	41	4	5	25	46	25	170
105. Diarrhea and enteritis (2 years and over)	2	9	2	34	7	29	1	17	13	114
106. Ankylostomiasis						4		1	5	10
107. Intestinal parasites	2		2	6		15	1	5	14	45
108. Appendicitis and typhlitis				2	2	3		6	2	15
109. Hernia, intestinal obstruction				2		1			1	4
110. Other diseases of the intestines	1	3		7	1	4			3	19
111. Acute yellow atrophy of the liver	2								1	3
112. Hydated tumors of the liver			1					1		2
114. Biliary calculi	1									1
115. Other diseases of the liver						1				1
116. Diseases of the spleen										1
117. Simple peritonitis (nonpuerperal)	1			8	3				3	15
118. Other diseases of the digestive system (cancer and tuberculosis excepted)	6			16				2		23
119. Acute nephritis				6	5	22		3	5	41
120. Bright's diseases	2			4				3	8	17
122. Other diseases of the kidneys and annexa			1						1	2
123. Calculi of the urinary passages				1						1
124. Diseases of the bladder		3						3	3	9
125. Diseases of the prostate									1	1
127. Nonvenereal diseases of the male genital organs						1	1		1	3
128. Uterine hemorrhage (nonpuerperal)	1			1		2		1		5
129. Uterine tumor (noncancerous)						1				1
130. Other diseases of the uterus				2		2			1	5
132. Salpingitis and other diseases of the female genital organs								1		1
134. Accidents of pregnancy				3	2	17	1	1	3	27
135. Puerperal hemorrhage	1			5	1	5		10	8	30
136. Other accidents of labor	1		2	7	1	17		4	6	37
137. Puerperal septicaemia				2	2	1		3	5	13
138. Puerperal albuminaria and convulsions	1							1		2
139. Puerperal phlegmasia, alba dolens, embolus, sudden death			1							1
140. Following childbirth (not otherwise defined)				1		1		6		8
141. Puerperal diseases of the breast				1	1	1				3
142. Gangrene		1				3		7	1	12
143. Furuncle					1	25		2	1	29
144. Acute abscess				6		23		1	4	34
145. Other diseases of the skin and annexa		3		2		57				62
146. Diseases of the bones (tuberculosis excepted)				2					2	4
147. Diseases of the joints (tuberculosis and rheumatism excepted)								4		4
148. Amputation	1			8						9
150. Congenital malformation (stillbirths not included)	1			2		2	2	2	6	15
151. Congenital debility, icterus and sclerema	7		5	11		139	3	42	79	286
152. Other diseases peculiar to early infancy	1		3	21		38	1	16	9	89
153. Lack of care	22		2	6	1	20		29	32	112
154. Senility	15		6	14	6	113	12	21	56	243
155. Suicide by poison								1		2
156. Suicide by asphyxia	1			1	1			1		4
158. Suicide by drowning	1			1	1			1		4

^a Up to June 30 only.^b Up to September 30 only.

Causes of deaths reported—Continued.

Number and diagnosis.	Agusan.	Bukidnon.	Cotabato.	Davao.	Lanao.	Misamis. ^a	Sulu.	Surigao. ^b	Zamboanga.	Total.
159. Suicide by firearms	1									1
160. Suicide by cutting or piercing instruments		1	1			1	1		4	8
161. Suicide by jumping from a high place	1									1
162. Suicide by crushing						1				1
163. Other suicide				1		1				2
164. Poisoning by food					2	2		2		6
165a. Venomous bites and stings		5				1		1		7
165b. Other acute poisoning					1					1
177. Burns (conflagration excepted)				1		3		4	3	11
168. Absorption of deleterious gasses (conflagration excepted)			2							2
169. Accidental drowning			1	2	1	7		1	9	21
170. Traumatism by firearms				2			3			5
171. Traumatism by cutting or piercing instruments			1				4	4		9
172. Traumatism by fall				7		3			1	11
173. Traumatism in mines and quarries								1		1
175. Traumatism by other crushing (vehicle, railways, landslides, etc.)					1					1
177. Starvation			2	3						5
178. Excessive cold							1			1
180. Lightening		1		1						2
183. Homicide by cutting or piercing instruments						2			1	3
184. Homicide by other means						1				1
185. Fractures (cause not specified)						8	2		1	11
186. Other external violence	2			2	3				3	10
187. Ill-defined organic diseases		2		1				1	4	8
188. Sudden death		7	2	3	2	4		10	2	30
189. Cause of death not specified or ill-defined		18	9	56		132		24	20	259
Total	464	436	141	1,930	154	3,625	170	1,749	1,368	10,037

^a Up to June 30 only.^b Up to September 30 only.

Comparative infant mortality rate per 1,000 births.

Province.	Number of deaths under one year.		Number of birth.		Rate.	
	1918	1919	1918	1919	1918	1919
Agusan	218	156	605	504	360.3	309.5
Bukidnon	1	8	567	534	1.7	14.9
Cotabato	76	38	313	278	242.8	136.6
Davao	189	257	932	1,010	212.4	254.4
Lanao	55	33	181	147	303.8	224.4
Misamis	^b 2,009	^a 1,194	^b 6,181	^a 3,627	325.0	329.1
Sulu	85	58	237	107	358.6	542.05
Surigao	413	^b 382	2,163	^b 1,506	190.9	253.6
Zamboanga	600	391	1,008	1,044	595.2	374.5
Total	3,656	2,517	12,187	8,757	299.9	287.4

^a Up to June 30 only.^b Up to September 30 only.

*Summary of the most common causes of mortality occurring during
the last two years.*

Causes.	1918 ^a		1919 ^b	
	Number.	Rate com- pared with total mor- tality.	Number.	Rate com- pared with total mor- tality.
		<i>Per cent.</i>		<i>Per cent.</i>
Malaria	1, 874	13. 39	2, 214	22. 05
Convulsions of infants	999	7. 14	618	6. 15
Beriberi	877	6. 26	522	5. 20
Congenital debility	397	2. 83	286	2. 84
Diarrhea and enteritis	236	1. 68	284	2. 82
Simple meningitis	51	.36	26	.25
Total	4, 434	31. 69	3, 950	39. 35

^a Incomplete: Report of Misamis up to September 30 only.

^b Incomplete: Report of Misamis up to June 30 only, and Surigao up to September 30 only.

HEALTH INDEX.

In connection with the work on statistics and to easily detect any epidemic outbreak the work on "health index" was started at the begining of the last quarter of 1919 in the municipalities of Zamboanga and Jolo. The officers concerned have been given the necessary practical instructions. The establishment of the system of health index and automatic health control will indubitably help in the early detection and suppression of diseases, especially dangerous communicable diseases.

XII.

INFANT WELFARE.

The infant mortality problem is still a serious one, requiring immediate attention. As already stated in previous reports, it is not only a sanitary but also a social and economic problem. Almost one-fifth of the total deaths during the last two years were of children under one year of age. Gastrointestinal diseases due to insanitary mode of living and the lack of proper care were the predominant causes noted.

Not a little time has been devoted to giving lectures and instructions to mothers and prospective mothers. The local and unregistered midwives received instructions from the district health officers, presidents, of sanitary division, district nurses, and midwives. Woman's clubs with no other aim but to help solve the problem were organized throughout the division. During the year there were in all 17 woman's clubs distributed as follows: Agusan 1, Cotabato 1, Lanao 1, Misamis 7, Sulu 1, Surigao 3, and Zamboanga 3. Due to the lack of funds and the necessary personnel, the work of the clubs cannot yet be pushed with rapidity.

Summary of the work done by the district nurses and midwives is as follows:

AGUSAN.

I. Maternity services:

1. Number of young girls instructed in hygiene.....	501
2. Number of prospective mothers instructed.....	443
3. Number of confinements attended.....	12
(a) Number of women delivered.....	8
(b) Number of women cared postpartum (delivered by midwife, local).....	4
(c) Number of women refusing assistance during labor	0
4. General data of mothers:	
(a) Average age (extremes).....	29
(b) Primiparae	2
(c) Multiparae	10
(d) Legal status:	
Married	12
Divorced	0
Widow	0
Unclassified (pregnancy outside of legal sanction)	0
5. Character of labor:	
(a) Abortion	3
(b) Premature	0
(c) Normal	9
(d) Abnormal	0
(e) Average duration of labor (extremes) hours....	6-7
Average duration of the third stage.....minutes....	15-20
6. Maternal condition:	
(a) Normal delivery.....	9
(b) Abnormal complications.....	0
Hemorrhage	3
Retained placenta.....	1
Crede	1
Puerperal fever.....	1
(c) Duration of puerperium.....days....	8-9
7. Foetal condition:	

	Normal.		Premature.		Aborted.		Stillborn.	
	M.	F.	M.	F.	M.	F.	M.	F.
Alive	7	4	0	0	0	0	0	0
Dead	1	0	0	0	0	0	0	0

Breast fed.....	8
Average weight (extremes).....grams....	3,000
Average duration of falling off of the cord.....days....	7
Average duration of cicatrization of umbilicus.do....	14
Babies born normal.....	11
Babies born ill.....	1

*Agusan—Continued.***I. Maternity services—Continued.****8. Children:**

(a) Number of children under one year old visited..	152
Breast fed.....	126
Bottled fed.....	26
(b) Number of children treated.....	341
9. Number of mothers instructed in maternal hygiene....	443
10. Number of mothers given treatment.....	12
11. Number of mothers instructed in care of babies.....	443
12. Number of visits made antepartum.....	18
13. Number of visits made postpartum.....	14
14. Average of visits per patient.....	8

II. Sanitary inspection:

15. Number of houses visited to give instructions on home sanitation	761
16. Number of houses maintained sanitary.....	718
17. Number of families induced to use potable drinking water supplies.....	238
18. Number of houses advised to install adequate disposal of human waste.....	30
19. Number of houses using potable drinking water supplies..	690
20. Number of houses using adequate disposal of human waste	726
Antipolo system.....	529
Pail system.....	197
21. Number of houses in the district.....	990

III. Social service:

22. Number of women instructed in domestic art.....	443
23. Number of women secured employment.....	0
24. Number of women referred to agency or society for material relief.....	0
25. Number of patients visited with reference to follow-up cases (convalescents)	7
26. Number of patients given nursing care at home.....	10
27. Number of families in the district.....	897
28. Approximate number of population in the district.....	41,997

IV. Miscellaneous:

29. Classes of patients:	
Government free.....	2
Government pay.....	7
Private pay.....	3
Charity	5
30. Total fees collected.....	₱89.96

COTABATO.**I. Maternity services:**

1. Number of young girls instructed in hygiene.....	268
2. Number of prospective mothers instructed.....	150
3. Number of confinements attended.....	46
(a) Number of women delivered.....	42
(b) Number of women cared postpartum (delivered by midwife, local).....	16
(c) Number of women refusing assistance during labor	4

Cotabato—Continued.

I. Maternity services—Continued.

4. General data of mothers:

(a) Average age (extremes).....years....	18-36
(b) Primiparae	3
(c) Multiparae	51
(d) Legal status:	
Married	54
Divorced	0
Widow	0
Unclassified (pregnancy outside legal sanc- tion)	0

5. Character of labor:

(a) Abortion	0
(b) Premature	2
(c) Normal	52
(d) Abnormal	0
(e) Average duration of labor (extremes) ..hours....	7-12

6. Maternal condition:

(a) Normal delivery.....	51
(b) Abnormal complications.....	3
Retained placenta.....	2
Crede	1
Manual	1
Unclassified	1

7. Fœtal condition:

	Normal.		Premature.		Aborted.		Stillborn.	
	M.	F.	M.	F.	M.	F.	M.	F.
Alive	25	27	0	0	0	0	0	0
Dead	0	0	2	0	0	0	0	0

Breast fed.....	51
Wet nurse.....	1
Bottle fed.....	0
Average duration of falling off of the cord...days....	3-5
Average duration of cicatrization of umbilicus..days....	5-12
Babies born normal.....	52
Babies born ill.....	2
Conjunctivitis	2
Eruptions	0
Unclassified	0

8. Children:

(a) Number of children under one year old visited..	272
Breast fed.....	271
Wet nurse.....	1

(b) Number of children treated.....	203
-------------------------------------	-----

9. Number of mothers instructed in maternal hygiene.....	221
10. Number of mothers given treatment.....	156
11. Number of mothers instructed on care of babies.....	258
12. Number of visits made antepartum.....	75
13. Number of visits made postpartum.....	207
14. Average visits per patient.....	2-11

Cotabato—Continued.

II. Sanitary inspection:

15. Number of houses visited to give instruction on home sanitation	398
16. Number of houses maintained sanitary.....	349
17. Number of families induced to use potable drinking water supplies.....	47
18. Number of houses using potable drinking water.....	245
19. Number of houses advised to install adequate disposal of human waste.....	69
20. Number of houses using adequate disposal of human waste	261
Antipolo system.....	227
Pail system.....	1
Pit system.....	33
21. Number of houses in the district.....	972

III. Social service:

22. Number of women instructed in domestic art.....	211
23. Number of women secured employment.....	320
24. Number of women referred to agency or society for material relief	261
25. Number of patients visited with reference to follow-up cases (convalescents)	206
26. Number of patients given nursing care at home.....	306
27. Number of families in the district.....	381
28. Approximate number of population in the district.....	1,171

IV. Miscellaneous:

29. Classes of patients—	
Government free.....	241
Charity	357

DAVAO.

I. Maternity services:

1. Number of young girls instructed in hygiene.....	10
2. Number of prospective mothers instructed.....	21
3. Number of confinements attended.....	15
(a) Number of women delivered.....	19
(b) Number of women cared postpartum (delivered by midwife, local).....	2
(c) Number of women refusing assistance during labor	0
4. General data of mothers:	
(a) Average age (extremes).....years....	20–26
(b) Primiparae	4
(c) Multiparae	15
(d) Legal status:	
Married	15
Divorced	0
Widow	0
Unclassified (pregnancy outside of legal sanction)	4

Davao—Continued.

I. Maternity services—Continued.

5. Character of labor:

(a) Abortion	0
(b) Premature	1
(c) Normal	18
(d) Abnormal	0
(e) Average duration of labor (extremes) ..hours....	3-4
Average duration of third state.....	55 minutes to 1 hour and 20 minutes.

6. Maternal condition:

(a) Normal delivery.....	18
(b) Abnormal complications.....	1
Hemorrhage	1
Beriberi	5
(c) Duration of puerperium.....	days.... 12-14

7. Fœtal condition:

	Normal.		Premature.		Aborted.		Stillborn.	
	M.	F.	M.	F.	M.	F.	M.	F.
Alive	9	6	0	0	0	0	0	0
Dead	0	0	1	0	0	0	0	0

Breast fed.....	14
Wet nurse.....	1
Bottle fed.....	1
Average duration of falling off of the cord...days....	8-9
Average duration of cicatrization of umbilicus.do....	10-11
Babies born normal.....	16
Babies born ill.....	1

8. Children:

(a) Number of children under one year old visited	10
Breast fed.....	9
Bottle fed.....	1
(d) Number of children treated.....	1

9. Number of mothers instructed in maternal hygiene.....	24
10. Number of mothers given treatment.....	15
11. Number of mothers instructed on care of babies.....	24
12. Number of visits made antepartum.....	3
13. Number of visits made postpartum.....	36
14. Average visit per patient.....	35

II. Sanitary inspection:

15. Number of houses visited to give instruction on home sanitation	20
16. Number of houses maintained sanitary.....	10
17. Number of families induced to use potable drinking water supplies.....	10
18. Number of houses using potable drinking water supplies..	10
19. Number of houses advised to install adequate disposal of human waste.....	10
20. Number of houses using adequate disposal of human waste	18
21. Number of houses in the district (about).....	263

Davao—Continued.

III. Social service:

22. Number of women instructed in domestic art.....	5
23. Number of women secured employment.....	0
24. Number of women referred to agency or society for material relief.....	0
25. Number of patients visited with reference to follow-up cases (convalescents).....	0
26. Number of patients given nursing care at home.....	15
27. Number of families in the district.....	276
28. Approximate number of population in the district.....	55,471

IV. Miscellaneous:

29. Classes of patients:	
Government free.....	6
Private pay	1
Charity	12
30. Total fees collected.....	₱25.00

MISAMIS.

I. Maternity service:

1. Number of young girls instructed in hygiene.....	2,475
2. Number of prospective mothers instructed.....	1,285
3. Number of confinements attended.....	74
(a) Number of women delivered.....	38
(b) Number of women cared postpartum (delivered by midwife, local).....	34
(c) Number of women refusing assistance during labor	2
4. General data of mothers:	
(a) Average age (extremes).....	18
(b) Primiparae	14
(c) Multiparae	42
(d) Legal status:	
Married	72
Divorced	0
Widow	1
Unclassified (pregnancy outside of legal sanction)	1
5. Character of labor:	
(a) Abortion	8
(b) Premature	4
(c) Normal	55
(b) Abnormal	7
(e) Average duration of labor (extremes).....	16 hours, 50 minutes.
Average duration of the third state.....	1 hour, 28 minutes.
6. Maternal condition:	
(a) Normal delivery	55
(b) Abnormal complications	19
	C. D.
Placentae previa.....	0 0
Hemorrhage	1 0

Misamis—Continued.

I. Maternity services—Continued.

6. Maternal condition—Continued.

(b) Abnormal complications—Continued.

Malpresentation of fœtus.....	4	0
Retained placenta.....	1	0
Crede	0	
Manual	0	
Puerperal fever.....	1	0
Deformed pelvis.....	1	0
Operations	5	0
Obstructing tumor.....	0	0
Operations	0	0
Beriberi	6	1
Tuberculosis	0	0
Unclassified	0	0

(c) Duration of puerperium.....days..... 15

7. Foetal condition:

	Normal.		Premature.		Aborted.		Stillborn.	
	M.	F.	M.	F.	M.	F.	M.	F.
Alive	32	24	3	1	1	1	3	2
Dead	0	0	0	0	2	2	0	0

Breast fed	71
Wet nurse	0
Bottle fed	0
Average weight (extremes).....	Not stated.
Average duration of falling off of the cord..days....	11
Average duration of cicatrizations of the umbilicus	24
Babies born normal	52
Babies born ill	19
Conjunctivitis	0
Eruptions	1
Unclassified	0

8. Children:

(a) Number of children under 1 year old visited.. 235

	C.	D.
Breast fed	182	2
Wet nurse.....	21	0
Bottle fed.....	26	4

(b) Number of children treated..... 152

9. Number of mothers instructed in maternal hygiene....	837
10. Number of mothers given treatment.....	55
11. Number of mothers instructed in the care of babies....	903
12. Number of visits made antepartum.....	88
13. Number of visits made postpartum.....	92
14. Average of visits per patient.....	229

II. Sanitary inspection:

15. Number of houses visited to give instruction on home sanitation	1,429
16. Number of houses maintained sanitary.....	1,171

Misamis—Continued.

II. Sanitary inspection—Continued.

17. Number of families induced to use potable drinking water supplies.....	1,360
18. Number of houses using potable drinking water supplies	4,290
19. Number of houses advised to install adequate disposal of human waste.....	1,337
20. Number of houses using adequate disposal of human waste	18,893
Flush toilets.....	16
Septic tanks	740
Antipolo systems	4,602
Pail systems	8,318
21. Number of houses in the district.....	16,350

III. Social service:

22. Number of women instructed in domestic art.....	16
23. Number of women secured employment.....	1
24. Number of women referred to agency or society for material relief.....	181
25. Number of patients visited with reference to follow-up cases (convalescents).....	31
26. Number of patients given nursing care at home.....	6
27. Number of families in the district.....	26,115
28. Approximate number of population in the district.....	105,411

IV. Miscellaneous:

29. Classes of patients—	
Government free.....	11
Government pay.....	27
Private pay.....	32
Charity	217

SURIGAO.

I. Maternity service:

1. Number of young girls instructed in hygiene.....	2,475
2. Number of prospective mothers instructed.....	495
3. Number of confinements attended.....	13
(a) Number of women delivered.....	290
(b) Number of women cared postpartum (delivered by midwife, local).....	91
(c) Number of women refusing assistance during labor	277
4. General data of mothers:	
(a) Average age (extremes).....years.....	18-40
(b) Primiparae	65
(c) Multiparae	225
(d) Legal status:	
Married	281
Divorced	0
Widow	0
Unclassified (pregnancy outside of legal sanction)	9

Surigao—Continued.

I. Maternity services—Continued.

5. Character of labor:

(a) Abortion	2
(b) Premature	1
(c) Normal	279
(d) Abnormal	8
(e) Average duration of labor (extremes).... 3 to 12 hours	
(f) Average duration or third stage.....do.....	1-3

6. Maternal condition:

(a) Normal delivery.....	280
(b) Abnormal complications.....	10
	C. D.
Placenta previa	0 0
Haemorrhage	0 0
Malpresentation of foetus.....	1 0
Retained placenta	0 0
Crede	0 0
Manual	0 0
Puerperal fever	1 0
Deformed pelvis, operation.....	0 0
Obstructing tumor, operation..	0 0
Beriberi	0 0
Tuberculosis	0 0
Unclassified	0 0
(c) Duration of puerperium.....days....	1-7

7. Foetal condition:

	Normal.		Premature.		Aborted.		Stillborn.	
	M.	F.	M.	F.	M.	F.	M.	F.
Alive	141	145	0	1	0	1	0	0
Dead	0	0	0	0	0	0	1	1

Breast fed	271
Wet nurse.....	1
Bottle fed	13
Average weight (extremes).....grams....	1,333-3,033
Average duration of falling off of the cord.days....	2-5
Average duration of cicatrization of umbilicus	days.... 3-10
Babies born normal.....	285
Babies born ill.....	5
Conjunctivitis	1
Eruptions	2
Unclassified	2

8. Children:

(a) Number of children under one year old visited	64
Breast fed.....	52
Wet nurse.....	9
Bottle fed.....	3
(b) Number of children treated.....	89

9. Number of mothers instructed in maternal hygiene.... 250

10. Number of mothers given treatment..... 55

11. Number of mothers instructed in the care of babies.... 362

Surigao—Continued.

I. Maternity services—Continued.	
12. Number of visits made antepartum.....	265
13. Number of visits made postpartum	300
14. Average visits per patient.....	2.6
II. Sanitary inspection:	
15. Number of houses visited to give instruction on home sanitation	515
16. Number of houses maintained sanitary.....	103
17. Number of families induced to install potable drinking water supplies	615
18. Number of houses using potable drinking water supplies	615
19. Number of houses advised to install adequate disposal of human waste.....	1,525
Flush toilet.....	1
Septic tank.....	4
Antipolo system.....	522
Pail system.....	2,045
Miscellaneous	560
20. Number of houses in the poblacion of Surigao.....	608
III. Social service:	
21. Number of women instructed in domestic art.....	550
22. Number of women secured employment.....	0
23. Number of women referred to agency or society for material relief.....	0
24. Number of patients visited with reference to follow-up cases (convalescents).....	61
25. Number of patients given nursing care at home....	89
26. Number of families in the district.....	800
27. Approximate number of population in the district....	15,658
IV. Miscellaneous:	
28. Classes of patients:	
Government free.....	33
Charity	309
ZAMBOANGA.	
I. Maternity service:	
1. Number of young girls instructed in hygiene.....	0
2. Number of prospective mothers instructed.....	408
3. Number of confinements attended.....	127
(a) Number of women delivered.....	65
(b) Number of women cared postpartum (delivered by midwife, local).....	62
(c) Number of women refusing assistance during labor	0
4. General data of mothers:	
(a) Average age.....	0
(b) Primiparae	16
(c) Multiparae	49
(d) Legal status:	
Married	62
Widow	1
Unclassified (pregnancy outside of legal sanction)	2

Zambonaga—Continued.

I. Maternity services—Continued.

5. Character of labor:

(a) Abortion	0
(b) Premature	2
(c) Normal	59
(d) Abnormal	5
(e) Average duration of labor (extremes) .3 to 24 hours	
Average duration of the third stage.....	10 minutes to 1 hour

6. Maternal condition:

(a) Normal delivery.....	56		
(b) Abnormal delivery.....	10		
		C.	D.
Placenta previa.....	0	0	
Hemorrhage	1	0	
Malpresentation of fetus.....	2	1	
Retained placenta.....	0	0	
Crede	42		
Manual	0		
Puerperal fever.....	1	0	
Deformed pelvis.....	0	0	
Operation	0		
Obstructing tumor	1	0	
Operation	0		
Beriberi	6	0	
Tuberculosis	1	0	
Unclassified	2	0	
(c) Duration of puerperium.....			0

7. Fœtal conditions:

	Normal.		Premature.		Aborted.		Stillborn.	
	M.	F.	M.	F.	M.	F.	M.	F.
Alive	29	29	0	2	0	0	0	0
Dead	2	1	0	2	0	0	1	0

Breast fed.....	53
Bottle fed.....	5
Average weight (extremes).....grams	3,660
Average duration of falling off of the cord.....days	4-10
Average duration of cicatrization of umbilicus	8-15
Babies born normal.....	54
Babies born ill.....	6
Conjunctivitis	7
Eruptions	5

8. Children:

(a) Number of children under one year old visited	318
Breast fed.....	288
Bottle fed.....	30

*Zamboanga—Continued.***I. Maternity services—Continued.**

(b) Number of children treated.....	85
9. Number of mothers instructed in maternal hygiene..	311
10. Number of mothers given treatment.....	107
11. Number of mothers instructed on the cares of babies..	577
12. Number of visits made antepartum.....	79
13. Number of visits made postpartum.....	104
14. Average visit per patient.....	22

II. Miscellaneous:

15. Classes of patients:	
Government free.....	7
Government pay.....	15
Private pay.....	19
Charity	27

MEDICAL INSPECTION OF SCHOOLS.

All of the schools in the division have not been inspected due to the topography of some of the places where schools are located, the extensive area to be covered, the scarcity of transportation and the lack of sanitary personnel. During the inspection not only the physical examination of the pupils, but also the inspection of the school buildings with their surroundings and toilet facilities were made.

In general the sanitary condition of the schools inspected was satisfactory; only in very few of the schools was there overcrowding, but lack of ventilation and proper lighting were observed. The use of benches or desks all of the same size in spite of the pupils having different statures should be prohibited from a physical point of view.

As in previous years, the most predominant diseases found were dental carries, tonsillitis and skin diseases.

Province.	Number of schools inspected.	Number of schools not inspected.	Number of pupils inspected.	Diseases found.						Total number of diseases.
				Sca-bies.	Tonsil-litis.	Con-juncti-vitis.	Contag-i-ous skin dis-eases.	Contag-i-ous eye dis-eases.	Dental caries.	
Agusan.....	10	59	981	34	153	10	101	39	169	506
Bukidnon.....	23	8	535	8					4	12
Cottobato.....	18	38	809	85	81	17	91	53	213	540
Davao.....	47	56	2442	41	70	3	97	7	210	428
Lanao.....	15	36	1054	101	31	12	4	2	174	324
Misamis.....	40	30	4739	74		197	254	422	446	1393
Sulu.....	5		1151	47	272	16	4		437	776
Surigao.....	16	93	1373	45	24	22	2		78	171
Zamboanga.....	17	1	1192	137	10	1	69	1	193	411
Total	191	321	14,276	572	641	278	622	524	1,924	4,561

MARKETS AND SLAUGHTERHOUSES.

During the year only 8 markets were constructed, making a total of 74 markets in existence at the close of the year. The small number constructed during the year was due primarily

to the lack of appropriations. Of the above number, 14, which have been mentioned in previous reports, are of concrete, the remainder of light materials, such as wood and bamboo. All the permanent markets have been kept in sanitary condition during the year. The temporary markets, due to their defective structures, cannot be maintained in a sanitary condition.

The two concrete slaughterhouses, one at Zamboanga and the other at Jolo, which were mentioned in the previous report, have not been increased during the year. All animals slaughtered therein for human consumption have been subjected to the ante- and post-mortem examinations. Though in other places there are no permanent slaughterhouses, nevertheless, all animals slaughtered have also been subjected to the same examinations. The sanitary condition of these two slaughterhouses has been satisfactory.

Sanitary markets and slaughterhouses.

Province.	Markets in 1918.			Slaughterhouses built in 1918.			Markets built in 1919.			Slaughterhouses built in 1919.		
	With water supply.	Without water supply.	Total.	With water supply.	Without water supply.	Total.	With water supply.	Without water supply.	Total.	With water supply.	Without water supply.	Total.
	No.	No.	No.	No.	No.	No.	No.	No.	No.	No.	No.	No.
Agusan	1	2	3									
Bukidnon												
Cotabato		13	13	1		1		5	5			
Davao		10	10		1	1		2	2			
Lanao		4	4									
Misamis	4	11	15	4	11	15						
Sulu	2	1	3		1	1						
Surigao	1	8	9	1	2	3		1	1		1	1
Zamboanga	6	3	9	2		2						
Total	14	52	66	8	15	23		8	8		1	1

XV

CEMETERIES.

The following table shows the number of cemeteries in this division:

Province.	In operation at the beginning of the year.	Opened during the year.	Closed during the year.	In operation at the end of the year.
Agusan	80		1	79
Bukidnon	6	6	4	9
Cotabato	9	4	5	8
Davao	47	7	1	53
Lanao	5	1		6
Misamis	91	5	1	95
Sulu	7			7
Surigao	55	1	1	55
Zamboanga	15	1		16
Total	315	25	13	328

The report for Agusan includes cemeteries used by Mohammedans in municipal districts which were not reported in 1918.

The cemeteries in regularly organized municipalities were established according to the rules and regulations governing cemeteries. The general sanitary condition of the cemeteries has hardly been satisfactory, although there are some which have been pronounced sanitary.

XVI.

SAN RAMON PENAL COLONY.

During the year the sanitation and hospital of the colony were under the immediate charge of a commissioned officer of the Service. Sanitary measures were carried out in the most strict way, but in spite of such measures and due to the abundance of squashes raised in the colony which decayed before they were all consumed or otherwise disposed of, large swarms of flies invaded the colony in March.

An anti-fly campaign was immediately started and the pest at once disappeared. An anti-bedbug campaign was also carried out during the year with excellent results.

The same as in previous years the colony is supplied with drinking water from a well-cared-for pump well.

Disposal of human wastes was made in the most sanitary way. Three methods are employed in the colony for the purpose; namely, sewage, modified Antipolo and pail systems. The sewage system is used in the prison and in the residences of the superintendent and assistant superintendent, the Antipolo system in the houses of prison guard sergeants and the pail system in the guard's quarters.

Fly-proof galvanized iron receptacles are used in the collection of garbage.

It is gratifying to state that during the year there has been no epidemic of dangerous communicable diseases in the colony. Only some isolated cases were registered. Below is given a comparative table showing the cases and deaths from dangerous communicable diseases registered during 1918 and 1919:

Diseases.	1918		1919	
	Cases.	Deaths.	Cases.	Deaths.
Cholera.....	1	1	0	0
Influenza.....	220	0	2	0
Tuberculosis.....	23	8	2	2
Dysentery.....	15	1	2	0
Typhoid fever.....	1	1	0	0
Mumps.....	125	0	4	0
Varicella.....	23	0	1	0
Tetanus.....	1	1	0	0
Total.....	409	12	11	2

As mentioned above, saccharose treatment for tuberculosis was tried in the colony with encouraging results.

In July a general revaccination of the inmates was made. Of the 580 men vaccinated the percentage of positives was 45 per cent. The fact that they have been vaccinated in the preceding years explains why the percentage of positives was low.

The survey for intestinal parasites started last year has been continued during 1919. Seventy-nine and seventy-three hundredths per cent of the 592 stool specimens examined were found positive for parasites. In the majority of cases combined infection was found, hookworm being the most common. Within the last quarter of the year the campaign had to be discontinued on account of the lack of appropriation. The result obtained so far has been very encouraging.

Percentage of findings.

	Per cent.
Ankylostoma and trichuris.....	32.48
Ankylostoma	25.64
Ankylostoma, ascaris, and trichuris.....	11.97
Ascaris and trichuris.....	6.41
Ankylostoma and ascaris.....	5.12
Ankylostoma, trichuris, trichomonas, and cercomonas.....	2.14
Ascaris	2.14
Ankylostoma, ascaris, trichuris, and entamoeba.....	1.71
Entamoeba	1.28
Ankylostoma, ascaris, trichomonas, and entamoeba.....	0.85
Ankylostoma, ascaris, trichuris, and anguillulæ strongyloides.....	0.85
Ankylostoma, oxyuris, trichuris, and entamoeba.....	0.43
Trichuris and cercomonas.....	0.43
Ankylostoma and trichomonas.....	0.43
Ascaris and trichomonas.....	0.43
Taenia	0.43
Ankylostoma, ascaris, trichuris, and cercomonas.....	0.43
Ascaris, taenia, trichuris, and entamoeba.....	0.43
Ascaris, trichuris, and entamoeba.....	0.43
Ascaris and entamoeba.....	0.43
Anguillulæ strongyloides and trichomonas.....	0.43
Trichuris and anguillulæ strongyloides.....	0.43
Ankylostoma, trichuris, and anguillulæ strongyloides.....	0.43
Ankylostoma, ascaris, anguillulæ strongyloides, and entamoeba.....	0.43
Ankylostoma and taenia.....	0.43
Ankylostoma, ascaris, and cercomonas.....	0.43
Ankylostoma, cercomonas, and trichomonas.....	0.43
Ankylostoma and anguillulæ strongyloides.....	0.43
Ankylostoma, oxyuris, and trichuris.....	0.43
Ankylostoma, anguillulæ strongyloides, cercomonas, and trichomonas.....	0.43
Trichuris and entamoeba.....	0.43
Ankylostoma, ascaris, trichuris, trichomonas, and cercomonas.....	0.43

In spite of the unsuitability of the actual operating room in the hospital of the colony, 3 major operations were performed during the year. All the cases were discharged cured.

The death rate in the colony among hospital cases was 1.67 per cent in 1919 as against 3.90 per cent in 1918.

EXTRACTS FROM THE REPORTS OF THE DISTRICT HEALTH OFFICERS.

AGUSAN.

Sanitary orders and prosecutions.—In general, local authorities have shown interest in coöperating with the health officer in the prosecution of infractors of sanitary ordinances and in many instances they have shown particular interest to promote the health and sanitary condition of this province. There were authorities, however, who misunderstood their duties in dealing with the health employees and many times interfered with the work of the health officers, if not with the district health officer. This is regrettable and should be avoided. Each officer and employee should stand by their respective plans for the compliance of specific duties assigned to them. To interfere with others means to obstruct and cause confusion, misunderstanding and ill-felling. It decreases the discipline in the health department and obscures its character as an independent branch of the Government. It is earnestly hoped that such misunderstandings will not occur in the future.

Sanitation among non-Christians.—With the exception of the people of Jabonga, non-Christians of this province are using water from the river for domestic purposes.

An Antipolo system of toilet is the one more generalized throughout the municipal districts and is giving a very remarkable result in preventing contagious communicable diseases. There are non-Christians who are using the pit system, but only very few. The common way of using streams and rivers as toilets in many places in the Moro Province is rather unknown in this province. Where the Antipolo closet is not made exactly according to the Philippine Health Service plan, it is made with almost any kind of guarantee of safety.

BUKIDNON.

Medical inspection of schools.—Most of the schools in this province are provided with the Antipolo closet. Each school building has its playground where the pupils take their daily exercises. In making the periodical examinations the pupils are always advised how to avoid diseases, especially communicable diseases and for this reason communicable diseases are very rare among them.

Disposal of excreta.—Almost all the municipalities have municipal ordinances regarding disposal of excreta. The Antipolo system of toilet is beginning to be generalized throughout the district.

COTABATO.

Publicity.—Publicity work should form one of the best means of conducting sanitary campaigns in this province; its prospect are promising. And this campaign work should be carried on with the aid of moving pictures; it would then be better understood by the people.

During the provincial exhibition held in Cotabato, December 4 to 7, the Service took part by exhibiting the sanitary model house and posters regarding the propagation of cholera, smallpox, malaria and typhoid, taken from Health Bulletin No. 19. Nearly five thousand people attended the exhibition and the method of transmitting infection from the above-mentioned diseases was explained to about five hundred of them.

Sanitation among non-Christians.—For the purpose of discussing sanitation among the non-Christians two main groups should be considered; namely, sanitation among non-Christians organized into municipal districts with one representative of the Service, and sanitation among non-Christians, including pagans, in communities not organized into sanitary districts and not provided with a representative of this Service. In the first group the Government agricultural colonies are included, and constitute the most advanced of non-Christians with reference to sanitation. This first group is formed by the following municipal districts: Parang, Awang, Dinaig, Tumbao, Dulawan, Peidu-Pulangi, Pagalungan, Ladtingan, Kidapawan, Buluan, Maganoy Koronadal, Buayan, Glan and Tabuan. With the exception of Awang, Tumbao, Koronadal, Buayan and Tabuan, a municipal ordinance enacted by the Provincial Board of Cotabato is enforced, dealing with general inspection of public and private premises, disposition of garbage, sanitation of markets, notification of dangerous communicable diseases and notification of births and deaths. The second group of municipal district consists of Mohammedan and pagan people living in the remaining fifteen municipal districts where the sanitary control is not fully extended on account of lack of personnel. In these places no municipal ordinance is enforced yet, and all sanitary control is exercised only in time of epidemics. As soon as conditions will permit these municipal districts will be placed under the same control as those of the first group already mentioned. In regard to the general sanitation those non-Christians living in communities with Christians are under more complete sanitary control than those living in separate communities. River water for drinking purposes is gradually being substituted by well water; cleaning of houses and yards is being done; the inspection of premises is not objected to and the carrying out of all sanitary orders is done peacefully. Markets, though not of the modern construction, but of sanitary type, are being built in all important places of each municipal district.

DAVAO.

New ordinances.—The following ordinances were enacted during the year 1919: Municipal ordinance providing for the sanitary condition of dwelling places; the installation of Antipolo system of toilet, the safe disposal of garbage and refuse; the regulation of licenses; the suppression of dangerous communicable diseases; regulating licenses and providing for the abatement of nuisances in the municipal districts; municipal ordinance providing for the organization of plantations throughout the province into sanitary barrios; municipal ordinance providing for the establishment of sanitary markets in the municipalities of Baganga and Cateel; municipal ordinance providing for the establishment of a municipal cemetery at Manay.

Home gardens.—The shortage of rice which the province suffered during the past year obliged the people to plant not only home gardens, but also true small plantations of corn and rice and other edible products. Home gardens are now found in Christian, Mohammedan, and pagan places.

Sanitation among non-Christians.—There were only four sanitary measures instituted among the non-Christians, namely; safe disposal of excreta, safe disposal of garbage and refuse, cleanliness and vaccination.

LANAO.

Sanitation among non-Christians.—Suffice it to say that district ordinances requiring the people to clean up their places and prohibiting them from defecating into running streams are being enforced thus tending to decrease the incidence of dysentery and other communicable diseases directly traceable to polluted water. Moro cemeteries are being planned and carried out, and although these are far from being satisfactory, they are much better than the old Moro custom of burying their dead in the yards and under the houses.

Agricultural colonies.—There is present but one agricultural colony in the province. This is the Momungan Agricultural Colony. It is in charge of one superintendent and a staff of employees and assistants. Sanitation, however, is under the Health Service and the hygienic condition of the place is, so far, quite satisfactory. There are a number of farm schools in the province, each a small agricultural colony in itself, as the pupils in these schools are doing on a small scale what colonists in agricultural colonies are doing on a somewhat larger scale.

MISAMIS.

Sanitary orders.—Almost all the sanitary orders issued during the year in regard to the installation of Antipolo system of toilets were complied with so that no one has been brought before the court.

SULU.

Sanitation among non-Christians.—The enforcement of cleanliness is being more rigidly carried out. Refuse is generally burned or buried. Food for sale is covered with screens. Vaccination is likewise being pushed. The municipal health officer of Siasi with the aid of fifteen prisoners cleaned the entire district of Laminusa thoroughly. More and more do the Moros realize the importance of keeping the houses and premises clean. Sanitation will be greatly enhanced by converting the naturally abundant springs in the province into sanitary pump wells, also by employing district nurses and midwives and by increasing the number of dispensaries.

Miscellaneous.—During the latter part of April and up to the end of May the district health officer had one registered nurse hold daily classes of instruction for the sanitary inspectors on first aid, dispensary work, diagnosis and treatment of common diseases, use of ordinary drugs, etc.

After numerous requests the prisoners in the local jail were provided with sanitary bunks. They no longer sleep on the cement floor.

SURIGAO.

New ordinances.—There were many municipal ordinances passed in the five municipalities, which provide for cleanliness of yards, adoption of the Antipolo system of toilet, and prohibition of owners to let loose in the street cattle and other animals.

ZAMBOANGA.

Sanitation among non-Christians.—Efforts have been made by the health personnel of the province for the institution of some sanitary measures

among the non-Christians who are yet far behind in civilization. Emphasis has been and is being laid on the instruction of the non-Christians to adopt the modern way of living. The religious belief of this non-Christian people is one of the impediments to their acceptance of the modern system. Their belief and custom that human wastes must be made to fall on streams, a custom to which they are still adhering regardless of the fact that they take their water for drinking and domestic purposes from the same streams, is one of the sanitary problems among the non-Christians. To establish a safe disposal of excreta and to overcome their custom of burying their dead near their homes will be a hard task. On the other hand, many of them are now following the rules of sanitation and are becoming accustomed to live in sanitary houses. They are now accustomed to call at the dispensary for medicine and to ask for help and advice from the dispensary attendants concerning sick members of their families.

XVIII.

RECOMMENDATIONS.

The following recommendations are submitted to carry out improvements for the ensuing year:

1. Establishment of a school of nursing in the city of Zamboanga in connection with the Zamboanga General Hospital.
2. Creation of a position for junior resident physician of the Lanao Public Hospital.
3. An appropriation to cover the salaries of two more district nurses for the Province of Lanao be made available.
4. Assignment of one commissioned officer in the district of Bongao, Province of Sulu.
5. To increase the Insular aid to the provinces of Cotabato, Davao, Bukidnon, and Agusan in order to establish more dispensaries, at least five in each province. The increase recommended will be spent for the salaries of the dispensary attendants and for supplies.
6. Establishment of a hospital in the Province of Surigao. This could be done by giving to the province from Insular funds ₱50,000 with which to construct the building. The cost of operation of the hospital will be defrayed from provincial and municipal funds and from voluntary contributions.
7. Establishment of a hospital in Mambajao (Camiguin Island) with the same conditions as for Surigao.
8. Appointment of an assistant chief of division.

REPORT OF THE OFFICE OF SANITARY ENGINEERING

EDWARD L. BARBER, *Sanitary Engineer.*

The work of this office may be divided into the following headings:

1. Sanitary supervision of building construction, city of Manila.
2. Execution and enforcement of structural sanitary orders, including all orders for filling in low lands, city of Manila.
3. Plumbing installation and inspection, city of Manila.
4. Sanitary and construction projects, provincial.
5. Drafting department.
6. Construction work, city of Manila.
7. Construction work, Culion Leper Colony.

MANILA.

The following tabulation shows the amount of routine work performed in the city of Manila and in the provinces. As compared with 546 sanitary orders of 1918, only 293 sanitary orders were issued during the year 1919, subdivided under the following headings: Minor orders, 190; sewer orders, 26; vacating orders, 76; and filling orders, 1. There is also a great difference between the number of orders completed in 1918 and that of 1919, that of the former year being 525, and of the latter 304, under the following headings: One hundred seventy-six minor orders; 58 sewer orders; 58 vacating orders, and 12 filling orders. The difference in the number of sanitary orders issued and completed in 1918 as compared with those completed and issued in 1919 is due to lack of personnel in the sanitary inspection section of this office.

Building projects to the number of 2,557 were acted upon by this office, 963 of which consist of plans for new strong material buildings, including additions and alterations. The remainder is divided into the following: Permits for minor buildings construction—233 approved, 44 disapproved and 177 new buildings completed; and light and mixed material structures—permits approved, 901; and permits disapproved, 299. The number of separate plumbing projects handled in this office during the year is 1,139, the total cost of which amounted to ₱363,554.69.

During the year, five convictions were secured, four for illegal plumbing and one for noncompliance with sanitary orders, with a total of ₱51 as fines. Besides, 23 cases were dismissed due to the fact that the orders were duly complied with.

The drafting branch of this office handled 73 separate drafting projects, 42 of which were completed, and most of the rest

well under way to completion. Three hundred sixteen blue-prints were made from various tracings during the year.

PROVINCIAL.

The following provincial trips were made:

The sanitary engineer, accompanied by the assistant sanitary engineer, made the trip to Culion, pursuant to a special order of the Director of Health (S. O. No. 4, paragraph 3, April 5, 1919), for the purpose of inspecting building and public works then under construction there, and also for investigating the necessity for future construction.

Another trip to Culion was made later in the year by the sanitary engineer, also accompanied by the assistant engineer and one draftsman, to investigate the condition of the hacienda Ungisan in order to ascertain whether or not it was possible to develop the same for rice plantations (See special order No. 9, paragraph 11, September 11, 1919, P. H. S.).

Statistical information by districts.

(Manila only.)

	Health districts.					
	No. 1.	No. 2.	No. 4.	No. 5.	No. 6.	Total.
Orders pending:						
December 31, 1918.	45	91	72	54	40	302
Orders issued:						
Minor orders	32	101	15	23	19	190
Sewer orders	4	19	2		1	26
Vacating orders		26	48	2		76
Filling orders					1	1
Total	36	146	65	25	21	293
Grand total	81	237	137	79	61	595
Orders completed:						
Minor orders	35	103	13	10	15	176
Sewer orders	10	44	3	1		58
Vacating orders		10	27	21		58
Filling orders	1		10		1	12
Total	46	157	53	32	16	304
Orders cancelled:						
Minor orders			1			1
Sewer orders		1				1
Vacating orders			1			1
Filling orders						
Total		1	2			3
Grand total	46	158	55	32	16	307
Orders pending December 31, 1919:						
Minor orders	10	13	9	14	14	60
Sewer orders	19	46	8	2	2	77
Vacating orders	1	20	23		24	68
Filling orders	5		42	31	5	83
Total	35	79	82	47	45	288

No. 1. Intramuros, Ermita, and Malate.
 No. 2. Meisic, Santa Cruz, Binondo, and San Nicolas.
 No. 4. Sampaloc, Quiapo, San Miguel, and Santa Mesa.
 No. 5. Tondo.
 No. 6. Paco, Pandacan, and Santa Ana.

Statistical information by quarters.

(Manila only.)

	First quarter.	Second quarter.	Third quarter.	Fourth quarter.	Total.
Orders pending: December 31, 1918					302
Orders issued:					
Minor orders	70	39	55	26	190
Sewer orders	12	7	1	6	26
Vacating orders	18	45	10	3	76
Filling orders				1	1
Total	100	91	66	36	293
Grand total					595
Orders completed:					
Minor orders	62	38	41	35	176
Sewer orders	19	10	11	18	58
Vacating orders	24	16	8	10	58
Filling orders	10	1		1	12
Total	115	65	60	64	304
Orders cancelled:					
Minor orders				1	1
Sewer orders	1				1
Vacating orders					
Filling orders	1				1
Total	2			1	3
Grand total	117	65	60	65	307
Orders pending December 31, 1919:					
Minor orders					60
Sewer orders					77
Vacating orders					68
Filling orders					83
Total					288

Statistical information by districts.

(Manila only.)

	Health districts—					Total.
	No. 1.	No. 2.	No. 4.	No. 5.	No. 6.	
Strong material plans approved:						
New buildings, including additions and alterations	188	296	193	174	112	963
Permits for minor building constructions:						
Approved	43	117	44	20	9	233
Disapproved	5	24	7	5	3	44
New buildings completed	11	58	22	13	13	117
Light and mixed material structures:						
Permits approved			252	509	140	901
Permits disapproved			80	133	86	299
Total number of building projects passed upon	247	495	598	854	363	2,557

Statistical information by quarters.

(Manila only.)

	First quarter.	Second quarter.	Third quarter.	Fourth quarter.	Total.
Strong material plans approved:					
New buildings, including additions and alterations	210	207	235	311	963
Permits for minor building constructions:					
Approved	64	45	39	85	233
Disapproved	17	10	10	7	44
New buildings completed	26	14	38	39	117
Light and mixed material structures:					
Permits approved	252	319	144	186	901
Permits disapproved	74	99	44	82	299
Total number of building projects passed upon	643	694	510	710	2,557

Statistical information by districts.

(Manila only.)

	Health districts—					
	No. 1.	No. 2.	No. 4.	No. 5.	No. 6.	Total.
Plumbing permits issued	233	527	211	175	94	1,240
Plumbing projects completed	215	504	172	164	84	1,139
Premises connected to the sanitary sewer to January 1, 1919	1,344	2,346	817	340	306	5,153
Premises connected during 1919	42	105	38	16	10	211
Total, December 31, 1919	1,386	2,451	855	356	316	5,364

Statistical information by quarters.

(Manila only.)

	First quarter.	Second quarter.	Third quarter.	Fourth quarter.	Total.
Plumbing permits issued	310	298	289	343	1,240
Plumbing projects completed	217	244	295	383	1,139
Premises connected to the sanitary sewer to January 1, 1919					5,153
Premises connected during 1919	36	47	56	72	211
Total, December 31, 1919					5,364

Statistical information by districts.

(Manila only.)

Health district.	Prosecutions.		
	Convictions.	Dismissals.	Amount of fines.
Intramuros		1	
Meisic	3	3	₱17.00
Sampaloc	1		30.00
Tondo	1	19	4.00
Paco			
Total	5	23	51.00

Statistical information by quarters.

(Manila only.)

Quarter.	Prosecutions.		
	Convictions.	Dismissals.	Amount of fines.
First.....	2	19	₱10.00
Second.....	2	1	11.00
Third.....	1	1	30.00
Fourth.....		2	
Total.....	5	23	51.00

DRAFTING PROJECTS.**Project No.**

6. Blue printing, at intervals, 316 copies made from various tracings.
43. Work report completed at the end of each month.
226. Lettering nurses certificates, at intervals.
425. Diagram showing provincial cholera cases, at intervals.
427. Computation for new general Culion survey, 100 per cent completed.
428. New general topographical map of Culion, scale—1:200, 50 per cent completed.
442. Proposed reinforced concrete second floor addition to general hospital, Culion Leper Colony, 80 per cent completed.
444. Diagram of smallpox epidemic, city of Manila, at intervals.
453. Portable seat cover of sanitary fly proof pail, 100 per cent completed.
455. General plumbing fixtures and house drainage, at intervals.
456. Proposed contagious disease hospital, 100 per cent completed.
457. Location of public midden sheds, at intervals.
468. Computing areas of low lands, city of Manila, at intervals.
475. Leveling and measuring at Pandacan, Beata, for a sanitary barrio, 100 per cent completed.
- 491. Proposed road and entrance for San Lazaro Hospital, 100 per cent completed.**
493. Revising map filing system, office of Sanitary Engineer, 100 per cent completed.
494. Lay-out for hospital, 100 per cent completed.
495. Map of the municipality of Pasay, 100 per cent completed.
496. Proposed Army model ambulance for the Philippine Health Service, 100 per cent completed.
497. Grippe or influenza census report (tabulated), 100 per cent completed.
499. Diagrammatic charts showing mortality from influenza, October 15 to November 30, 1918, 100 per cent completed.
500. Chart, provincial health index, total mortality and mortality under one year of age.
501. Lettering boxes for vaccines, 100 per cent completed.
502. Diagram showing organization of sanitary development and publicity division, 100 per cent completed.
503. Reestimating bill of materials of the sanitary model house, 100 per cent completed.
504. Measuring building of Luzon Truck Company at Azcarraga, 100 per cent completed.
505. Plan for the sanitary maintenance of sari-sari stores or tiendas, 50 per cent completed.

506. Enlarging plan of grease trap, 3- and 5-gallon capacities, 100 per cent completed.
507. Preliminary estimates for the proposed reinforced concrete second floor addition to Culion hospital, 100 per cent completed.
508. Proposed hospital ward for Culion Leper Colony, 100 per cent completed.
509. Standard drawings, at intervals.
510. Designs for tickets and posters for woman's club, Malabon, for infant care campaign, 100 per cent completed.
511. Standard miscellaneous calculation tables, 90 per cent completed.
512. Alteration of project No. 508.
513. Club-house, Culion Leper Colony "Get Well Club," 100 per cent completed.
514. Plaza Dr. Clements and proposed anchoring basin for Culion Leper Colony, 100 per cent completed.
515. Standard multiple tienda and living quarters, 100 per cent completed.
516. Standard kitchens for tenement houses, Culion Leper Colony, 100 per cent completed.
517. Standard lettering for Culion street system.
518. Sawmill for Culion Leper Colony.
519. Forms, Philippine Health Service, for the division of infant welfare.
520. Concrete bench and bandstand for Culion Leper Colony.
521. Weekly health index, infant mortality rate per 1,000 births (birth, death, and infant mortality rate).
522. Plan of sanitary refrigerator.
523. Four comparative charts on different causes of mortality, city of Manila.
524. San Lazaro Hospital wooden garage.
525. Revising system of house plumbing, city of Manila.
526. Tape measurement Calle T. Alonzo No. 600—610, Calle Zacateros.
527. San Lazaro Hospital concrete garage, 100 per cent completed.
528. Standard stairs for Culion Leper Colony, 100 per cent completed.
529. Diagrams, present and proposed organization of Philippine Health Service, with models, Nos. 1 and 2, 100 per cent completed.
530. Diagrams, present and proposed organization of the division of sanitary engineering, 100 per cent completed.
531. Proposed Bayombong hospital, Nueva Vizcaya, 100 per cent completed.
532. Design of float, Philippine Health Service, for Victory Day parade, 100 per cent completed.
533. Diagrams, proposed reorganization of each division of the Philippine Health Service, 100 per cent completed.
534. Miscellaneous office work, continuous.
535. Diagram of proposed reorganization with budget, Philippine Health Service, 100 per cent completed.
536. Banners for receiving the Chief Executive, 100 per cent completed.
537. Sign for district nursing clinic, clinic municipal physician, school clinic, and physical examination, 100 per cent completed.
538. Diagram, cholera cases from 1902 to 1919, 100 per cent completed.
539. Philippine Health Service nurses' regulation uniforms, 100 per cent completed.
540. Tabulated charts infant mortality, intervals.
542. Diagram of salaries and wages of mosquito and rat extermination work for the year 1920, paid by the city, 100 per cent completed.

- 543. Charts showing different causes of mortality.
- 544. Topographical survey and plan of Ugnisan hacienda, Culion, 100 per cent completed.
- 545. Estimating bill of materials for the construction of public midden shed with pit, six seats, Antipolo system, 100 per cent completed.
- 546. Revising plan of reservoir, Culion Leper Colony, 100 per cent completed.
- 547. Charts for Philippine Health Service for 1920 Carnival, 80 per cent completed.
- 549. Lettering views of Culion, 100 per cent completed.
- 550. Sketch of location plan, Sibul Springs, 100 per cent completed.
- 551. Plans and sections of partitions of Manila Hotel and apartment houses.
- 552. Tracings of topographical map of Culion for the proposed wireless station, 100 per cent completed.
- 553. Estimating bill of materials for public midden shed with pit, 2 seats, Antipolo system.

REPORT OF PROPERTY OFFICE

(B. D. BURHAM, *Chief of Office.*)

The efficiency of this office was somewhat impaired due to the fact that all the clerks, except one, either resigned or transferred between February 1st and May 15th, making it necessary to employ inexperienced men where trained personnel was required. This was specially noticeable in the handing of rush orders for medical supplies and equipment during the cholera and smallpox epidemics, when the prompt filling and forwarding of materials requisitioned was of vital importance.

During the year three hundred and twenty-seven general requisitions were received and filled, originating from the following stations:

Provincial requisitions	70
Health stations	106
San Lazaro Hospital	23
District nursing office	23
Culion Leper Colony	21
Baguio Hospital	20
Sanitary engineering Office	18
Central Office	14
Disinfecting squad	12
Extra Cantonment Zone.....	10
Sibul Springs Sanitarium.....	6
Statistical office	3
Division of Mindanao and Sulu.....	1
Total	327

Two hundred and twenty-eight requisitions were prepared and forwarded to the Bureau of Supply for delivery to the following stations:

Office of property.....	122
San Lazaro Hospital.....	47
Health Station No. 2, Meisic.....	1
Culion Leper Colony.....	41
Baguio Hospital.....	16
Provincial Sanitary Commission.....	1
Total	228

One hundred and thirty-seven requisitions were prepared and forwarded to the Bureau of Printing.

Orders for general supplies prepared under the direct order and payment system, 250.

Thirty-nine commissary requisitions were received and filled, originating from the following stations:

San Lazaro Hospital.....	10
Culion Leper Colony.....	23
Baguio Hospital	6
Total	39

Commissary requisitions forwarded to the Bureau of Supply:

For Culion Leper Colony.....	29
For San Lazaro Hospital.....	19
For Office of Property.....	15
For Baguio Hospital.....	11
Total	74

Orders for commissaries prepared under direct order and payment system:

For Culion Leper Colony.....	194
For Baguio Hospital.....	86
For San Lazaro Hospital.....	6
Total	286

Miscellaneous orders prepared	229
Orders prepared for Culion merchandise account.....	264

Vaccine Report.

On hand January 1, 1919.....	Units. 21,100
Received during the year.....	9,360,000
Total to be accounted for.....	9,381,100
Issued during the year.....	9,322,000
Remaining on hand December 31, 1919.....	59,100
Requisitions for vaccine virus received and failed.....	1,375
Shipments made by steamer.....	368
Shipments made by railroad.....	215
Total	583

Inter-bureau vouchers and bills received and passed by the office of property:

	Number.	Amount.
Bureau of Supply	719	₱268,861.67
Bureau of Printing.....	17	42,745.85
Bureau of Public Works	16	424.84
Bureau of Prisons	14	876.00
Bureau of Science	12	91,431.50
Bureau of Posts	5	1,520.00
Bureau of Agriculture	1	297.00
The Division of Cold Storage	11	3,981.49
Philippine School of Arts and Trades	5	76.50
City of Manila	1	28.23
Open market	479	120,932.11
Total	1,280	531,195.19

STATISTICAL TABLES.

PHILIPPINE HEALTH SERVICE.

JANUARY 1 TO DECEMBER 31, 1919.

GENERAL STATISTICS

[Unless otherwise stated these statistics are for the fiscal year from January 1 to December 31, 1919.]

POPULATION OF THE CITY OF MANILA.

[General Census of 1918.]

BY NATIONALITIES.

Nationality.	Population.		
	Male. ^a	Female. ^a	Total. ^b
Americans	2,484	650	3,134
Filipinos	132,818	124,588	257,356
Spaniards	1,496	459	1,955
Other Europeans	746	380	1,126
Chinese	16,235	1,621	17,856
All others	1,590	596	2,186
Total	155,369	128,244	283,613

BY DISTRICTS.

Healt districts.	Population.		
	Male. ^a	Female. ^a	Total. ^b
No. 1, Intramuros	19,144	15,729	34,873
No. 2, Meisic	59,332	37,812	97,144
No. 4, Sampaloc	23,376	22,654	46,030
No. 5, Tondo	38,275	36,923	75,198
Nc. 6, Paco	15,242	15,126	30,368
Total	155,369	128,244	283,613

^a Estimated population.

^b General Census of 1918.

MARRIAGES.¹

Nationality.	Total marriages.	Health districts—						Single males married—			Widowed males married—			Divorced males married—			Nationality of brides—					Relationship—	
		No. 1.	No. 2.	No. 4.	No. 5.	No. 6.	Single fe- male.	Widowed female.	Divorced female.	Single fe- male.	Widowed female.	Divorced female.	Single fe- male.	Widowed female.	Divorced female.	Americans.	Filipinos.	Spaniards.	Other Eu- ropean.	Chinese.	All others.		Blood.	Affinity.
Americans.....	104	53	16	11	7	17	80	11	—	7	2	—	2	1	1	36	62	1	4	—	1	—	—
Filipinos.....	2,867	238	1,264	376	770	219	2,360	159	—	196	152	—	—	1	—	2,867	2,867	—	—	—	—	—	—
Spaniards.....	1	—	—	—	1	—	1	—	—	—	—	—	—	—	—	—	1	—	—	—	—	—	—
Other Europeans.....	15	9	3	1	1	1	12	1	—	1	—	1	—	—	—	2	6	—	6	—	1	—	—
Chinese.....	60	3	39	5	11	2	51	1	—	5	3	—	—	—	—	—	42	—	—	18	—	—	—
All others.....	6	1	2	1	2	—	6	—	—	—	—	—	—	—	—	—	5	—	—	1	—	—	—
Total.....	3,053	304	1,324	394	792	239	2,510	172	—	209	157	1	2	1	1	38	2,983	1	10	18	3	—	—

¹ Registration incomplete.

Average per thousand population, 21.52.

MARRIAGES BY AGE.¹

Males.		Females.						
Age.	Number.	To 14 years.	To 20 years.	To 25 years.	To 30 years.	To 40 years.	To 50 years.	Over 50 years.
To 14 years								
To 20 years	733	9	647	63	10	4		
To 25 years	1,313	10	907	310	65	19	2	
To 30 years	531	3	234	190	76	27	1	
To 40 years	304		102	85	62	48	7	
To 50 years	126		20	24	22	47	12	1
Over 50 years	46		6	5	9	14	7	5
Total	3,053	22	1,916	677	244	159	29	6

¹ Registration incomplete.**BIRTHS REPORTED.¹**

[Closed January 31, 1920.]

Nationality.	Male.	Annual birth rate per 1,000.	Female.	Annual birth rate per 1,000.	Total.	Annual birth rate per 1,000.
Americans	81	32.60	72	110.76	153	48.81
Filipinos	4,923	37.06	4,429	35.56	9,352	36.33
Spaniards	22	14.70	34	74.07	56	28.64
Other Europeans	19	25.46	26	68.42	45	39.96
Chinese	213	13.11	156	96.23	369	20.66
All others	27	16.98	27	45.30	54	24.70
Total	5,285	34.01	4,744	36.99	10,029	35.36

¹ Registration not quite complete.**BIRTHS, BY DISTRICTS.¹**

[Closed January 31, 1920.]

Health District.	Legitimate.			Illegitimate.			Grand total.	Annual birth rate per 1,000.
	Male.	Female.	Total.	Male.	Female.	Total.		
No. 1. Intramuros	896	860	1,756	54	61	115	1,871	53.65
No. 2. Meisic	937	814	1,751	29	48	77	1,828	18.81
No. 4. Sampaloc	828	746	1,574	60	42	102	1,676	36.41
No. 5. Tondo	1,678	1,425	3,103	108	92	200	3,303	43.92
No. 6. Paco	682	637	1,319	13	19	32	1,351	44.48
Total	5,021	4,482	9,503	264	262	526	10,029	35.36

Number of births attendants by—

	Living.	Still-births.
Physician	2,563	212
Midwife	2,173	35
Family	5,293	202

¹ Registration not quite complete.

BIRTHS, ACCORDING TO NUMBER OF CHILDREN BORNE BY MOTHER.

[Closed January 31, 1920.]

Number of births in the order in which the child was born, whether first child, second child, etc.	Living.			Stillborn.			Grand total.
	Male.	Female.	Total.	Male.	Female.	Total.	
First	1,218	1,077	2,295	61	47	108	2,403
Second	861	814	1,675	34	26	60	1,735
Third	714	634	1,348	26	26	52	1,400
Fourth	621	538	1,159	20	28	48	1,207
Fifth	509	434	943	24	18	42	985
Sixth	420	360	780	22	11	33	813
Seventh	246	282	528	13	18	31	559
Eighth	224	177	401	7	8	15	416
Ninth	153	160	313	6	7	13	326
Tenth	111	102	213	10	6	16	229
Eleventh	78	62	140	2	7	9	149
Twelfth	53	41	94	5	3	8	102
Thirteenth	35	33	68	3	4	7	75
Fourteenth	17	15	32	2		2	34
Fifteenth	12	5	17				17
Sixteenth	4	3	7	2	1	3	10
Seventeenth	4	3	7	1	1	2	9
Eighteenth	1	2	3				3
Nineteenth	1	1	2				2
Twentieth	1	1	2				2
Twenty-first	2		2				2
Total	5,285	4,744	10,029	238	211	449	10,478

NUMBER OF DEATHS AND DEATH RATE PER 1,000 AMONG RESIDENTS, BY NATIONALITIES.

Nationality.	Male.	Annual death rate per 1,000.	Female.	Annual death rate per 1,000.	Total.	Annual death rate per 1,000.
Americans	25	10.06	7	10.76	32	10.21
Filipinos	3,911	29.44	3,467	27.83	7,378	28.66
Spaniards	30	20.05	14	30.50	44	22.50
Other Europeans	6	8.04	6	15.78	12	10.65
Chinese	285	17.55	35	21.59	320	17.92
All others	20	12.57	8	13.42	28	12.80
Total	4,277	27.52	3,537	27.58	7,814	27.55

A CLASSIFIED REPORT OF ALL DEATHS OCCURRING IN MANILA, INCLUDING TRANSIENTS.

Social condition.	Number.	
	Male.	Female.
Married	1,440	1,007
Divorced		3
Widowed	395	674
Single	699	239
Children	2,580	2,094
Condition not stated	34	4
Total	5,148	4,021
Grand total	9,169	
Stillbirths		467
Number of deaths with medical attendance		4,776
Number of deaths without medical attendance		4,893

DEATHS, BY AGES.

Ages.	Residents.		Transients.		Total.
	Male.	Female.	Male.	Female.	
Under 30 days	455	295	30	21	801
30 days to under 1 year	633	500	160	162	1,455
1 year to under 2 years	404	356	35	24	819
2 years to 4 years	480	404	33	34	951
5 years to 9 years	243	195	31	21	490
10 years to 14 years	68	73	8	9	158
15 years to 19 years	147	94	30	26	297
20 years to 29 years	384	295	165	56	900
30 years to 39 years	288	338	123	48	797
40 years to 49 years	362	229	104	35	730
50 years to 59 years	280	176	77	22	555
60 years to 69 years	232	180	43	13	468
70 years to 79 years	139	157	23	9	328
80 years to 89 years	90	117	4	2	213
90 years to 99 years	49	111	4	2	166
100 years and over	7	16	1		24
Age not stated	16	1			17
Total	4,277	3,537	871	484	9,169

DEATHS AND DEATH RATE PER 1,000, BY DISTRICTS, INCLUDING TRANSIENTS.

Health district--	Deaths	Annual death-rate per 1,000
No. 1, Intramuros	1,424	40.83
No. 2, Meisic	1,672	17.21
No. 4, Sampaloc	1,398	30.37
No. 5, Tondo	3,826	50.87
No. 6, Paco	849	27.95
Total	9,169	32.32

TUBERCULOSIS CASES REPORTED IN THE CITY OF MANILA DURING THE FISCAL YEAR 1919.

[Closed January 21, 1920.]

Nationality.	Health Districts.										Total.
	No. 1.		No. 2.		No. 4.		No. 5.		No. 6.		
	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	
Americans							1				1
Filipinos	22	14	174	135	55	36	136	98	65	52	787
Spaniards							1				1
Other Europeans			1								1
Chinese			23	2					2		27
All others											
Total	22	14	198	137	55	36	138	98	67	52	817

Of the total of 817 cases from tuberculosis during the fiscal year 1919, there have also been reported 54 males and 28 females, provincial cases; and 2 males, permanent residence unknown.

Number of deaths with causes, occurring among residents and transients in the city of Manila (stillbirths not included)—Ctd.

Causes of death.	Americans.				Filipinos.				Spaniards.				Other Europeans.				Chinese.				All others.				Total.				Grand total.	
	Resi- dents.		Trans- sients.		Resi- dents.		Trans- sients.		Resi- dents.		Trans- sients.		Resi- dents.		Trans- sients.		Resi- dents.		Trans- sients.		Resi- dents.		Trans- sients.							
	Male.	Female.	Male.	Female.	Male.	Female.	Male.	Female.	Male.	Female.	Male.	Female.	Male.	Female.	Male.	Female.	Male.	Female.	Male.	Female.	Male.	Female.	Male.	Female.						
154. Senility					163	288	11	7	2	2	1						1				166	290	12	7					475	
XII.—Old age.																														
XIII.—Affections caused by external causes.																														
155. Suicide by poison	1				1	4	1	2													2	5	1	2					10	
157. Suicide by hanging or strangulation					1																1								2	
158. Suicide by drowning																													1	
160. Suicide by cutting or piercing instruments					2		1														2								3	
167. Burns (conflagration excepted)	1				3	3	2	3													1	1							14	
169. Accidental drowning					17	2	2														23	2	3						28	
170. Traumatism by firearms					2		2														2								4	
171. Traumatism by cutting or piercing instruments					1		1	1													1								3	
172. Traumatism by fall					4	1	2														5	1	2	1					8	
174. Traumatism by machines																													1	
175. Traumatism by other crushing (vehicles, rail-ways, landslides, etc.)					8		6	3													9								18	
176. Injuries by animals					1		1														1								2	
181. Electricity (lightning excepted)					6																6		1						6	
183. Homicide by cutting or piercing instruments					3	2	3														3	2	5						10	
184. Homicide by other means					1																1								1	
185. Fractures (cause not specified)					4	2	7														2	1							16	
186. Other external violence					6		4	1													6		4	1					11	
XIV.—Ill-defined diseases.																														
187. Ill-defined organic disease	1	1			41	23	12	5	1																				1	
189. Cause of death not specified or ill-defined																					46	24	13	5					88	
Total	25	7	21	6	3,911	3,467	763	469	30	14	10	2	6	6	10	2	285	35	40	1	20	8	27	4	4,277	3,537	871	484	9,169	
Grand total	32	27			7,378	1,232	44	12	12	12							320	41	28	31	7,814	1,355							9,169	

Number of deaths by nationality, sex, and age—Continued.

Causes of death.	2 years to 4 years.						5 years to 9 years.						10 years to 14 years.					
	Amer- icans.		Span- iards.		Other Euro- peans.		Amer- icans.		Span- iards.		Other Euro- peans.		Amer- icans.		Span- iards.		Other Euro- peans.	
	Male.	Female.	Male.	Female.	Male.	Female.	Male.	Female.	Male.	Female.	Male.	Female.	Male.	Female.	Male.	Female.	Male.	Female.
<i>VIII.—Diseases of the skin and of the cellular tissue.</i>																		
142. Gangrene																		
143. Furuncle																		
144. Acute abscess																		
<i>IX.—Diseases of the bones and of the organs of locomotion.</i>																		
146. Diseases of the bones (tuberculosis excepted)																		
<i>XIII.—Affections caused by external causes.</i>																		
167. Burns (conflagration excepted)																		
169. Accidental throwing																		
170. Traumatism by firearms																		
176. Traumatism by other crushing (vehicles, railways, landslides, etc.)																		
176. Injuries by animals																		
181. Electricity (lightning excepted)																		
185. Fractures (cause not specified)																		
186. Other external violence																		
<i>XIV.—Ill-defined diseases.</i>																		
186. Cause of death not specified or ill-defined																		
Total	4	1 504	430	1	1	2	2	5	1	1	2	269	210	2	1	3	1	1
Grand total	5	934	2	2	2	7	1	3	479	2	1	4	1	150			8	

Causes of death.	15 years to 19 years.						20 years to 29 years.						30 years to 39 years.					
	Amer- icans.		Span- iards.		Other Euro- peans.		All oth- ers.		Amer- icans.		Span- iards.		Other Euro- peans.		All oth- ers.		Amer- icans.	
	Male.	Female.	Male.	Female.	Male.	Female.	Male.	Female.	Male.	Female.	Male.	Female.	Male.	Female.	Male.	Female.	Male.	Female.
1. Typhoid fever	29	17																
4. Malaria		3																
4a. Malarial cachexia																		
5. Smallpox	3																	
10. Influenza																		
12. Asiatic cholera	8	9																
14. Dysentery	8	2																
17. Leprosy																		
18. Erysipelas																		
20. Purulent infection and septicaemia	1																	
22. Anthrax																		
23. Rabies	1																	
24. Tetanus	3																	
27. Beriberi																		
28. Tuberculosis of the lungs	49	34																
29. Acute miliary tuberculosis	1																	
30. Tuberculosis meningitis																		
31. Abdominal tuberculosis		2																
32. Pott's disease	1																	
33. White swelling	1																	
34. Tuberculosis of other organs																		
35. Disseminated tuberculosis	1	2																
36. Rickets																		
37. Syphilis																		
39. Cancer and other malignant tumors of the buccal cavity																		
40. Cancer and other malignant tumors of the stomach, liver	1																	
41. Cancer and other malignant tumors of the peritoneum, intestines, rectum																		
42. Cancer and other malignant tumors of the female genital organs																		
44. Cancer and other malignant tumors of the skin																		

I.—General diseases.

Number of deaths by nationality, sex, and age—Continued.

Causes of death.	40 years to 49 years.						50 years to 59 years.						60 years to 69 years.					
	Amer- icans.		Filipi- nos.		Span- iards.		Other Chi- nese.		All oth- ers.		Amer- icans.		Filipi- nos.		Span- iards.		Other Chi- nese.	
	Male.	Female.	Male.	Female.	Male.	Female.	Male.	Female.	Male.	Female.	Male.	Female.	Male.	Female.	Male.	Female.	Male.	Female.
1. Typhoid fever	1		5															
4. Malaria			8		6													
4a. Malarial cachexia			1		1													
10. Influenza	1		5															
12. Asiatic cholera	20	13	1				2											
14. Dysentery	1		6	5			1											
17. Leprosy			1															
18. Other epidemic diseases																		
20. Purulent infection and septicemia			2															
22. Anthrax	1		1															
23. Rabies																		
24. Tetanus			3		1													
27. Beriberi	1		4															
28. Tuberculosis of the lungs	147	123	1	42	2		21											
29. Acute miliary tuberculosis	2																	
30. Tuberculosis meningitis																		
31. Abdominal tuberculosis	5	2		2														
34. Tuberculosis of other organs	1		1															
35. Disseminated tuberculosis	1		2															
37. Syphilis							1											
38. Gonococcus infection			1															
39. Cancer and other malignant tumors of the buccal cavity																		
40. Cancer and other malignant tumors of the stomach, liver and other organs	3	4																
41. Cancer and other malignant tumors of the peritoneum, intestines, rectum	1		1				1											
42. Cancer and other malignant tumors of the female genital organs					6													
43. Cancer and other malignant tumors of the breast			1															
44. Cancer and other malignant tumors of the skin					1													

I.—General diseases.

VIII.—Diseases of the skin and of the cellular tissue.																								
142. Gangrene.....	1													1										
143. Furuncle.....														2										
145. Other diseases of the skin and annexe.....														1										
XIII.—Affections by external cause.																								
155. Suicide by poison.....	1													1										
157. Suicide by hanging or strangulation.....																								
158. Suicide by drowning.....																								
160. Suicide by cutting or piercing instruments.....																								
167. Burns (conflagration excepted).....																								
169. Accidental drowning.....	1													1										
170. Traumatism by firearms.....	1													1										
171. Traumatism by cutting or piercing instruments.....																								
172. Traumatism by fall.....	1													1										
176. Traumatism by other crushing (vehicles, railways, landslides, etc.).....																								
183. Homicide by cutting or piercing instruments.....	1													3										
185. Fractures (cause not specified).....														1										
XIV.—Ill-defined diseases.																								
189. Cause of death not specified or ill-defined.....																								
Total.....	2													13										
Grand total.....	14	338	261	5	1	1	1	101	1	7	5	2	257	193	9	1	5	1	81	1	1	21	1	3

Number of deaths by nationality, sex, and age—Continued.

Causes of death.	70 years and over.						Unknown.						Total.						Grand total.							
	Amer- 70 years and over.		Span- 70 years and over.		Other Euro- 70 years and over.		Chi- 70 years and over.		All others 70 years and over.		Amer- 70 years and over.		Filipi- 70 years and over.		Span- 70 years and over.		Other Euro- 70 years and over.			Chi- 70 years and over.		All others 70 years and over.				
	Amer- 70 years and over.	Filipi- 70 years and over.	Amer- 70 years and over.	Filipi- 70 years and over.	Span- 70 years and over.	Other Euro- 70 years and over.	Chi- 70 years and over.	All others 70 years and over.	Amer- 70 years and over.	Filipi- 70 years and over.	Span- 70 years and over.	Other Euro- 70 years and over.	Chi- 70 years and over.	All others 70 years and over.	Amer- 70 years and over.	Filipi- 70 years and over.	Span- 70 years and over.	Other Euro- 70 years and over.		Chi- 70 years and over.	All others 70 years and over.	Amer- 70 years and over.	Filipi- 70 years and over.	Span- 70 years and over.	Other Euro- 70 years and over.	Chi- 70 years and over.
<i>XIII.—Affections caused by external causes—Ctd.</i>																										
167. Burns (conflagration ex- cepted)																										
169. Accidental drowning																										
170. Traumatism by firearms																										
171. Traumatism by cutting or piercing instruments																										
172. Traumatism by fall																										
174. Traumatism by machines																										
175. Traumatism by other crushing (vehicles, rail- ways, landslides, etc.)																										
176. Injuries by animals																										
181. Electricity (lightning ex- cepted)																										
183. Homicide by cutting or piercing instruments																										
184. Homicide by other means																										
185. Fractures (cause not speci- fied)																										
186. Other external violence																										
<i>XIV.—Ill-defined diseases.</i>																										
187. Ill-defined diseases																										
189. Cause of death not speci- fied or ill-defined																										
Total	2																									
Grand total	1	307	407	8	7		1				10	11			46	13	4,674	3,936	40	16	8	325	36	47	12	9,169

DEATHS, BY OCCUPATIONS.

Occupation.	Number.	
	Male.	Female.
Professional:		
Architects, artists, teachers of art, etc.	8	5
Clergymen, priests, nuns, etc.	17	7
Engineers and surveyors	4	
Journalists		
Lawyers	9	
Musicians and teachers of music	13	
Nurses and midwives		3
Physicians and surgeons	7	
Teachers (schools)	10	7
Others of this class	8	
Clerical and official:		
Bookkeepers, clerks, and copyists	93	1
Bankers, brokers, and officials of companies	3	
Collectors, auctioneers, and agents	5	
Stenographers and typists	2	
Telegraph and telephone operators	2	
Others of this class	67	
Mercantile and trading:		
Apothecaries, pharmacists, etc.	2	1
Commercial travellers	3	
Merchants and dealers	148	53
Hucksters and peddlers		
Shopkeepers		
Others of this class	26	45
Public entertainment:		
Hotel and boarding-house keepers	1	
Saloon keepers, liquor dealers, bartenders, and restaurant keepers	1	
Personal service, police, and military:		
Barbers and hairdressers	36	
Janitors and sextons	8	
Policemen, watchmen, and detectives	19	
Soldiers, sailors, and marines	32	
Others of this class	22	
Laboring and servant:		
Laborers (not agricultural)	688	8
Launderers	21	177
Servants	118	112
Manufacturing and mechanical industry:		
Artificial flower and paper box makers		1
Bakers and confectioners	13	
Blacksmiths	32	
Boot, shoe, and slipper makers	13	
Brewers, distillers, and rectifiers		
Butchers	9	
Cabinet makers and upholsterers		
Carpenters and joiners	128	
Cigar makers and tobacco workers	76	148
Clock and watch repairers, jewellers, etc.	3	
Compositors, printers, etc.	22	
Coopers		
Embroiderers (gold, silk, etc.)		
Engineers and firemen (not locomotive)	2	
Glass blowers and glass workers		
Leather makers		
Leather workers	3	
Machinists	22	
Marble and stone cutters	10	
Mason (brick and stone)	19	
Mill and factory operatives (textiles)		5
Millers (flour and grist)		
Milliners		
Painters, glaziers and varnishers	26	
Plumbers and gas and steam fitters	3	
Tailors, and dressmakers and seamsters	40	233
Tinners and tinware makers	11	
Others of this class	88	1

Deaths, by occupation—Continued.

Occupation.	Number.	
	Male.	Female.
Agriculture, transportation, and other outdoor:		
Boatmen and canalmen.....	17	—
Draymen, drivers and teamsters.....	85	—
Farmers, planters and farm laborers.....	154	3
Gardeners, florists, nurserymen, etc.....	6	1
Livery-stable keepers and hostlers.....	—	—
Lumbermen and raftsmen.....	2	—
Miners and quarrymen.....	—	—
Sailors, pilots, fishermen and oystermen.....	98	5
Steam railroad employees.....	1	—
Stock raisers, herders and drovers.....	—	—
Others of this class.....	30	1
All other occupations.....	241	100
Total.....	2,477	917
Grand total.....	3,394.	

INFANT MORTALITY.

Causes of Death.	Under 24 hours.	24 hours to under 36 hours.	36 hours to under 48 hours.	48 hours to under 14 days.	14 days to under 1 year.	Total.
Abscess:						
Congenital (abdominal wall).....	1	—	—	—	—	1
Multiple.....	—	—	—	—	2	2
Worm.....	—	—	—	—	1	1
Anæmia, acute.....	—	—	—	1	—	1
Asphyxia:						
Neonatorum.....	4	—	—	—	—	4
Postpartum.....	2	—	—	—	—	2
Atelectasis.....	1	1	—	—	—	2
Of the lungs.....	—	—	—	2	—	2
Athrepsia.....	—	—	—	—	28	28
Parrot.....	—	—	—	—	1	1
Atrophy, infantile.....	—	—	—	—	3	3
Beriberi, infantile.....	—	2	—	21	331	354
Biliary calculi.....	—	—	—	—	1	1
Bronchitis:						
Acute.....	—	—	—	5	304	309
Capillary.....	—	—	—	1	32	33
Chronic.....	—	—	—	—	75	75
Bronchopneumonia.....	—	—	—	3	76	79
Grippal.....	—	—	—	—	3	3
Cardiac, congenital.....	—	—	1	2	1	4
Cholera.....	—	—	—	—	7	7
Infantum.....	—	—	—	—	1	1
Congestion of lungs.....	1	—	—	—	—	1
Consumption.....	—	—	—	—	1	1
Convulsions of children.....	2	—	—	57	97	156
Cystopyelo nephritis with anaemia.....	—	—	—	—	1	1
Debility, congenital.....	149	42	11	216	91	509
Decomposed male foetus.....	—	1	—	—	—	1
Diarrhoea and enteritis.....	—	—	—	1	20	21
Dilatation, acute of stomach.....	—	—	—	1	1	2
Diphtheria.....	—	—	—	—	3	3
Dysentery.....	—	—	—	—	28	28
Dispepsia, infantile.....	—	—	—	1	6	7
Eczema.....	—	—	—	—	1	1
Empyema.....	—	—	—	—	2	2
Enteritis.....	—	—	—	1	51	52
Enterocolitis.....	—	—	—	—	4	4
Erysipelas.....	—	—	—	2	3	5
Erythema.....	—	—	—	—	1	1
Exhaustion, congenital.....	—	—	—	2	—	2
Fever, gastric.....	—	—	—	—	1	1
Fever, unknown cause.....	—	—	—	1	—	1
Furunculosis.....	—	—	—	—	3	3
Gastritis.....	—	—	—	—	1	1
Chronic.....	—	—	—	—	1	1
Gastroenteritis.....	—	—	—	—	81	81

Infant mortality—Continued.

Causes of Death.	Under 24 hours.	24 hours to under 36 hours.	36 hours to under 48 hours.	48 hours to under 14 days.	14 days to under 1 year.	Total.
Gonorrhoeal ophthalmia and vulvitis (from mother infection)					1	1
Grippe					1	1
Haemophilia					2	2
Haemorrhage:						
Neonatorum				2		2
Of newborn				5		5
Umbilical				5	1	6
Hepatitis and icterus				1		1
Hernia, strangulated				1		1
Hernia, inguinal					3	3
Hypertrophy of the thymus					1	1
Icterus	1			5	9	15
Ileocolitis					11	11
Imperforated anus				6		6
Inanition	1				6	7
Indigestion, severe					1	1
Malaena, neonatorum					1	1
Malaria					1	1
Malformation				1		1
Malnutrition					36	36
Marasmus					61	61
Meningitis					19	19
Acute				1	68	69
Cerebrospinal					2	2
Otitic					1	1
Tuberculous					2	2
Moist gangrene of the vulva					1	1
Myocarditis, acute					2	2
Nephritis					2	2
Acute		1			23	24
Chronic					3	3
Parenchymatous					4	4
Obstruction, intestinal			1		2	3
Occlusion, intestinal					1	1
Omphalitis				1		1
With secondary peritonitis				1		1
Peritonitis					4	4
Acute; secondary to infection of cord				1		1
Pertussis, pneumonia, bilateral					1	1
Phlegmon diffuse					2	2
Pleurisy					5	5
Pleuropneumonia					4	4
Pneumonia:						
Lobar		1			1	2
Tuberculous					1	1
Pulmonary fluxion	1			1		2
Premature of birth	22	2		2	2	28
Pemphigus					1	1
Rickets					1	1
Rupture of liver and haemorrhage into peritoneal cavity	1					1
Serofula					1	1
Septicaemia					13	13
And nephritis					1	1
Smallpox					12	12
Spina, befida					1	1
Suppurative of the umbilicus					1	1
Tetanus				64	1	65
Tuberculosis:						
Of the lungs					1	1
Osseous					1	1
Ulcerative colitis					1	1
Undetermined	3	1		1	2	7
Uraemia				1		1
Syphilis, congenital					1	1
Total	189	51	13	417	1,586	2,256

**COMPARATIVE MORTALITY FROM JANUARY, 1909, TO DECEMBER, 1919,
INCLUSIVE.**

Month.	1909		1910		1911		1912	
	Number of deaths.	Annual death rate per 1,000.	Number of deaths.	Annual death rate per 1,000.	Number of deaths.	Annual death rate per 1,000.	Number of deaths.	Annual death rate per 1,000.
January	720	c 37.94	729	d 36.64	653	d 32.82	698	d 35.08
February	616	c 35.94	638	d 35.50	536	d 29.82	611	d 32.82
March	618	c 32.57	642	d 32.26	574	d 28.85	732	d 36.79
April	550	c 29.95	594	d 30.85	547	d 28.41	671	d 34.85
May	544	c 28.67	604	d 30.35	609	d 30.60	701	d 35.23
June	552	c 30.06	546	d 33.55	693	d 35.99	605	d 31.42
July	691	c 36.41	799	d 40.15	830	d 41.71	689	d 34.63
August	679	c 35.73	731	d 36.74	878	d 44.13	705	d 35.43
September	649	c 35.34	664	d 34.48	741	d 38.48	661	d 34.33
October	700	c 36.89	705	d 35.43	686	d 34.48	633	d 31.81
November	778	c 42.37	642	d 33.34	782	d 40.61	573	d 29.76
December	839	c 44.22	635	d 31.91	698	d 35.08	540	d 27.14
Total	7,936	c 35.50	8,029	d 34.25	8,227	d 35.09	7,819	d 33.35

Month.	1913		1914		1915		1916	
	Number of deaths.	Annual death rate per 1,000.	Number of deaths.	Annual death rate per 1,000.	Number of deaths.	Annual death rate per 1,000.	Number of deaths.	Annual death rate per 1,000.
January	502	d 35.23	570	f 25.15	678	f 29.92	634	f 27.98
February	445	d 24.76	499	f 24.38	545	f 26.63	559	f 26.37
March	451	d 22.66	462	f 20.39	570	f 25.15	593	f 26.17
April	442	d 22.95	464	f 21.16	551	f 25.13	567	f 25.85
May	504	d 25.33	430	f 18.97	557	f 24.58	548	f 24.18
June	442	d 22.95	387	f 17.65	557	f 25.40	513	f 23.39
July	410	c 19.49	540	f 23.82	605	f 26.70	573	f 25.29
August	439	c 20.87	581	f 25.64	602	f 26.57	717	f 31.64
September	529	c 25.99	693	f 31.60	542	f 24.71	827	f 37.91
October	550	c 26.15	624	f 27.54	553	f 24.40	551	f 24.31
November	590	c 28.99	651	f 29.69	482	f 21.98	494	f 22.53
December	600	c 28.53	686	f 30.27	578	f 25.51	589	f 25.99
Total	5,904	c 24.48	6,587	f 24.67	6,820	f 25.54	7,165	f 26.84

Month.	1917		1918		1919	
	Number of deaths.	Annual death rate per 1,000.	Number of deaths.	Annual death rate per 1,000.	Number of deaths.	Annual death rate per 1,000.
January	485	f 21.40	713	f 31.46	661	f 29.17
February	469	f 22.91	685	f 33.47	589	f 28.78
March	539	f 23.78	878	f 38.75	623	f 27.49
April	500	f 22.80	954	f 43.51	496	c 21.29
May	545	f 24.05	1135	f 50.09	460	c 19.16
June	500	f 22.80	1242	f 56.64	528	c 22.66
July	555	f 24.49	1083	f 47.80	876	c 36.39
August	615	f 27.14	957	f 42.23	1,004	c 41.70
September	548	f 24.99	917	f 41.82	736	c 31.59
October	598	f 26.39	1121	f 49.47	656	c 27.25
November	639	f 29.14	1867	f 85.15	601	c 25.79
December	689	f 30.41	817	f 36.05	584	c 24.26
Total	6,682	f 25.03	12,369	f 46.33	7,814	c 27.55

c Death rate computed on population of 223,542 (Health Census, 1907).

d Death rate computed on population of 234,409 (Health Census, 1910).

e Death rate computed on estimated population of 247,756.

f Death rate computed on population of 266,943 (Health Census, 1914).

g Death rate computed on population of 283,613 (General Census, 1918).

MORTALITY COMPARED WITH SAME PERIOD OF PREVIOUS YEARS.

Year.	First Quarter.		Second Quarter.		Third Quarter.		Fourth Quarter.		Total.	
	Num- ber of deaths.	Annual death rate per 1,000.	Num- ber of deaths.	Annual death rate per 1,000.	Num- ber of deaths.	Annual death rate per 1,000.	Num- ber of deaths.	Annual death rate per 1,000.	Num- ber of deaths.	Annual death rate per 1,000.
1909	1,945	35.47	1,646	29.55	2,019	35.85	2,317	41.14	7,986	35.50
1910	2,009	34.78	1,844	31.57	2,194	37.15	1,982	33.56	8,029	34.25
1911	1,763	30.52	1,849	31.65	2,449	41.47	2,166	36.68	8,227	35.09
1912	2,041	34.94	1,977	33.85	2,055	34.80	1,746	29.57	7,819	33.35
1913	1,398	24.20	1,388	23.76	1,378	22.08	1,740	27.88	5,904	24.48
1914	1,531	23.27	1,281	19.26	1,814	26.97	1,961	29.16	6,587	24.67
1915	1,793	27.25	1,665	25.03	1,749	26.01	1,613	23.98	6,820	25.54
1916	1,786	26.85	1,628	24.47	2,117	31.48	1,634	24.30	7,165	26.84
1917	1,493	22.69	1,545	23.23	1,718	25.55	1,926	28.64	6,682	25.03
1918	2,276	34.60	3,331	50.08	2,957	43.97	3,805	56.58	12,369	46.33
1919	1,873	28.47	1,484	21.00	2,616	36.61	1,841	25.77	7,814	27.55

CHOLERA AND PLAGUE, CITY OF MANILA.

Nationality.	Cholera.				Plague.			
	Cases.		Deaths.		Cases.		Deaths.	
	Male.	Fe- male.	Male.	Fe- male.	Male.	Fe- male.	Male.	Fe- male.
Americans	7	1						
Filipinos	472	359	226	164				
Spaniards	3	1	1	1				
Other Europeans	1	2						
Chinese	9	1	6	1				
All others	5							
Total	497	364	233	166				

District and age.	Cholera.		Plague.	
	Cases.	Deaths.	Cases.	Deaths.
Health districts:				
No. 1, Intramuros	96	31		
No. 2, Meisic	171	62		
No. 4, Sampaloc	164	69		
No. 5, Tondo	277	177		
No. 6, Paco	153	60		
Total	861	399		
Ages:				
Under 1 year	12	6		
1 year to 9 years	297	205		
10 years to 19 years	130	36		
20 years to 29 years	191	52		
30 years to 39 years	103	30		
40 years to 49 years	69	35		
50 years and over	59	35		
Unknown				
Total	861	399		

Number of cases found alive, cholera, 722; plague, 0.
Number of cases found dead, cholera, 139; plague, 0.

SMALLPOX, CITY OF MANILA.

A total of 57 cases and 39 deaths occurred during the period covered by this report.

VARIOLOID, CITY OF MANILA.

A total of 23 cases and 1 death occurred during the period covered by this report.

VARICELLA, CITY OF MANILA.

A total of 165 cases occurred during the period covered by this report.

RATS CAMPAIGN OPERATIONS.

Number of spring traps set.....	431,106
Number of rats caught with spring traps.....	79,714
Number of wire traps set.....	628
Number of rats caught with wire traps.....	12
Number and kind of baits (coconut).....	431,663
Number of poison portions placed.....	639,694
Number of rats found poisoned.....	3,804
Number of rats killed by clubs and other weapons.....	14,098
Number of rats found dead from other causes.....	3,690
Total number of rats otherwise caught, found dead or killed.....	101,318
Total rats sent to laboratory for examination.....	101,318

REPORT OF SICK AND WOUNDED POOR ATTENDED BY MUNICIPAL PHYSICIANS.

Health districts and physicians.	Nationality.																	Deaths.	Total visits.			
	Americans.				Foreigners.				Filipinos.				Chinese.				Recoveries.			Total.		
	Adults.		Children.		Adults.		Children.		Adults.		Children.		Adults.		Children.							
	Male.	Female.	Male.	Female.	Male.	Female.	Male.	Female.	Male.	Female.	Male.	Female.	Male.	Female.	Male.	Female.						
	Male.	Female.	Male.	Female.	Male.	Female.	Male.	Female.	Male.	Female.	Male.	Female.	Male.	Female.	Male.	Female.						
No. 1, Intramuros: Dr. Cavanna	1	1			4	3			867	817	273	266			1		2,232	357	316	6	4	4,929
No. 2, Meisic: Drs. C. Reyes and Tee Han Kee									355	442	224	207	367		23		1,620	703	397		1	7,630
No. 4, Sampaloc: Dr. F. Castañeda				2					682	1260	882	742					3,566	152	175	4	1	4,232
No. 5, Tondo: Drs. P. Gabriel and V. Pantoja									784	752	717	641	8		3		2,910	533	257			6,359
No. 6, Paco: Dr. J. B. Cabarrús									286	262	262	187					992	291	225	3	1	2,213
Total	1	1	4	2	10	3			2,974	3,523	2,358	2,043	375		27		11,321	2,036	1,370	13	7	28,363

CITY MORGUE REPORT.

Disposition.	Number of bodies.	Disposition.	Number of bodies.
Remaining from last year	81	Transferred to—	
Received	1,168	Army Morgue	4
Total	1,249	Dental College	2
Buried by—		Government Museum	11
City	567	Private Morgue	1
Family	505	Provinces	94
		San Lazaro Morgue	1
		Remaining at end of the year	64
		Total	1,249

DISPOSITION OF DEAD BODIES.

Disposition.	Number.	Disposition.	Number.
Buried at cemetery of—		Remaining in—Continued.	
Binondo	2,147	Private morgues	3
Chinese	412	Santo Tomas University	32
Norte	5,925	Philippine Dental College	2
Pandacan—		Mary Johnson Hospital (foetus)	1
Filipino Church	122	Mary Chiles Hospital	1
Roman Catholic Church	31	Care of Dr. Gavieres	1
Singalong	484	Shipped to the United States	6
Otherwise dispose of—		Transferred to Government Museum (stillbirths)	61
Cremated	54	Transferred to provinces	662
Remaining in—		Total	10,007
Army Morgue	4		
City Morgue	59		

DISINTERMENTS.

Cemetery.	Number.	Cemetery.	Number.
Balicbalic	5	Paco	138
Binondo	100	Santa Ana	1
Chinese	86	Santa Cruz	16
Loma	6	Tondo	2
Malate	3	Total	376
Norte	17		

GENERAL INSPECTIONS OF HOUSES, PREMISES, VAULTS, ETC., WITH IMPROVEMENTS ORDERED, WHITEWASHED, CLEANED, ETC., BY MEDICAL INSPECTORS, SANITARY INSPECTORS, AND ASSISTANT SANITARY INSPECTORS.

1. Inspections of houses by sanitary inspectors	18,772
2. Reinspections of houses for verification of work ordered	2,423
3. Inspection of houses by assistant sanitary inspectors and sanitary policemen	298,864
4. Reinspection of houses by assistant sanitary inspectors and sanitary policemen	62,879
5. Houses ordered cleaned (written)	6,923
6. Houses ordered cleaned (verbal)	35,860
7. Houses cleaned	52,455
8. Houses ordered whitewashed and painted	644
9. Houses whitewashed and painted	627
11. Number of houses recommended condemned and removed	0
12. Number of houses condemned and removed	0
13. Number of localities where "squatters" are located	0
14. Number of samples of water, foods, etc., sent to laboratory	19,863
15. Number of reports for same	18,969
16. Number of fire-plugs opened or closed for sanitary purposes	0
17. Number of hydrants recommended reopened	0
18. Number of houses where garbage has not been removed for two days	0
19. Number of persons reported sick to municipal physicians	16,220
20. Cesspools and vaults ordered cleaned	16
21. Cesspools cleaned	10
22. Yards ordered cleaned	18,979
23. Yards cleaned	18,599
24. Yards ordered repaired (repaved, etc.)	104
25. Yards repaired	86
26. Number of cholera cases reported by sanitary inspectors	238
27. Number of cholera cases found "alive"	868

General inspections of houses, promises, vaults, etc.—Continued.

28. Number of cholera cases found "dead".....	154
29. Number of orders issued during the quarter.....	2,345
30. Number of orders complied with during the quarter.....	2,646
31. Number of orders awaiting action.....	165
32. Number of orders pending in court.....	144
33. Average number of food tiendas in the districts.....	2,733
34. Number of persons convicted for violation of prohibition orders.....	193
35. Average number of regular inspectors on duty.....	95
36. Average number of regular emergency inspectors on duty.....	32
37. Number of lepers sent to San Lazaro Hospital.....	70
38. Number of plague cases reported.....	0
39. Number of smallpox cases reported.....	172

REPORTS OF DISINFECTIONS.

Causes for disinfections.	Disinfections.	Contacts.
Cholera.....	527	7,478
Cholera, suspect and cholera contacts.....	978	0
And measles.....	1	0
Contacts.....	19	60
General disinfection for cholera.....	77,822	0
General disinfection for cholera and vibrio carrier.....	4,184	0
Observation for cholera.....	46	0
Suspect.....	1,226	18,016
Vibrio carrier.....	170	639
Vibrio carrier and dysentery carrier.....	2	0
Diarrhea observation for cholera.....	10	0
Diphtheria.....	56	92
Carrier.....	46	0
Carrier and typhoid fever.....	2	0
General disinfection diphtheria.....	107	0
Suspected.....	4	21
Dysentery.....	476	750
Amoebiasis.....	1	0
Contacts.....	3	0
General disinfection for dysentery.....	3,318	0
Exhumation.....	366	0
Gastro enteritis and diarrhea.....	3	0
Grippe.....	3	0
Influenza and pneumonia post influenza.....	4	0
Leprosy.....	52	22
Contacts.....	2	0
Suspected.....	4	0
Measles.....	13	10
Mumps.....	1	0
Paratyphoid.....	4	0
Pertussis.....	1	5
Pneumonia.....	1	0
Pulmonary tuberculosis.....	69	0
Smallpox.....	69	140
Contacts.....	4	7
Tetanus.....	12	6
Tuberculosis.....	85	94
Contacts.....	4	0
Typhoid fever.....	406	2,530
And cholera vibrio carrier.....	1	0
Contacts.....	2	4
General disinfection for typhoid fever.....	4,407	0
Varicella.....	90	123
Varioloid.....	26	100
Contacts.....	1	0
Insanitary conditions.....	717	3
Total.....	95,345	30,105

REPORT OF ACTION TAKEN ON APPLICATIONS FOR LICENCES.

Approved.....	9,027
Disapproved.....	454
Total acted upon.....	9,481

CHOLERA IN THE PROVINCES.

[Closed January 16, 1920.]

Province and town.	By town.		By province.		Mortal- ity.
	Cases.	Deaths.	Cases.	Deaths.	
Albay:					Per
Albay	94	63			
Bacacay	68	48			
Camalig	89	68			
Guinobatan	49	42			
Jovellar	7	3			
Libog	38	22			
Libon	26	18			
Ligao	67	57			
Malilipot	13	5			
Malinao	8	3			
Oas	62	53			
Polangui	73	55			
Rapurapu	153	102			
Tabaco	31	21			
Tiwi	11	9			
Virac	37	16	826	585	70.82
Ambos Camariues:					
Baao	14	15			
Bato	5	6			
Buhi	25	12			
Bula	16	10			
Cabusao	28	24			
Calabanga	93	69			
Camaligan	2	2			
Canaman	4	1			
Iriga	20	19			
Lagonoy	17	3			
Libmanan	56	37			
Magarao	142	103			
Minalabac	2	1			
Nabua	17	22			
Naga	95	65			
Pamplona	2	1			
Pasacao	2	1			
Pili	27	22			
Sagnay	25	15			
Tigaon	6	4			
Tinambac	3	2	601	434	72.21
Antique:					
Barbaza	6	4			
Bugason	46	24			
Dao	11	10			
Lauaan	9	15			
Patnongon	21	20			
San Jose	50	32			
San Remigio	14	7			
Sibalom	85	62			
Valderrama	1	1	243	175	72.01
Bataan:					
Balanga	1	1			
Dinalupihan	7	6			
Hermosa	1	0			
Limay	2	1			
Moron	1	1			
Orani	7	6			
Orion	1	1			
Samal	2	2	22	18	81.81
Batangas:					
Alitagtag	10	7			
Batangas	267	209			
Bauan	208	173			
Bolboc	96	71			
Calaca	3	2			
Cuenca	5	7			
Ibaan	5	5			
Lemery	83	53			
Lipa	104	77			
Lobo	20	12			
Mabini	50	41			
Malvar	15	11			
Rosario	90	66			
San Jose	45	31			
San Luis	14	10			
Santo Tomas	70	56			
Taal	83	64			
Talisay	136	99			
Tanauan	129	108			
Taysan	22	18	1,455	1,120	76.79

Cholera in the provinces—Continued.

Province and town.	By town.		By province.		Mortality.
	Cases.	Deaths.	Cases.	Deaths.	
Bohol:					<i>Per ct.</i>
Alburquerque	3	3			
Antequera	21	19			
Baclayon	7	6			
Balilihan	16	11			
Calape	11	7			
Corella	9	6			
Cortes	43	27			
Dausi	21	19			
Laoay	1	0			
Mabini	2	0			
Maribajoc	78	48			
Panglao	13	13			
Sevilla	1	1			
Sikatuna	4	3			
Tagbilaran	27	22			
Tubigon	9	6	266	191	71.80
Bulacan:					
Baliuag	78	58			
Bigaa	5	4			
Bocaue	28	18			
Bulacan	26	16			
Bustos	1	1			
Calumpit	90	60			
Guiguinto	16	14			
Hagonoy	150	97			
Malolos	18	12			
Meycauayan	4	3			
Obando	21	15			
Paombong	20	15			
Polo	9	6			
Pulilan	29	23			
Quingua	1	1			
San Ildefonso	22	18			
San Jose	6	2			
San Miguel	120	89			
San Rafael	24	16			
Santa Maria	7	6	675	474	70.22
Cagayan:					
Abulog	12	10			
Alcala	17	7			
Amulong	8	5			
Aparri	52	41			
Gattaran	11	10			
Lallo	25	23			
Tuguegarao	16	13	141	109	77.30
Capiz:					
Banga	1	1			
Capiz	37	32			
Makato	21	10			
Panay	29	18			
Panitan	11	10			
Pilar	6	3			
Pontevedra	22	10	127	84	66.14
Cavite:					
Amadeo	30	16			
Bacoar	11	9			
Carmona	24	17			
Cavite	6	2			
Dasmariñas	52	39			
Imus	74	51			
Indang	42	23			
Kawit	12	8			
Malabon	3	3			
Maragondon	5	4			
Mendez-Núñez	30	16			
Naic	21	19			
Noveleta	2	0			
Rosario	8	5			
Silang	54	37			
Tanza	10	6			
Ternate	7	8	391	263	67.26
Cebu:					
Alcantara	18	7			
Alcoy	10	6			
Alegria	10	9			
Argao	48	35			
Asturias	2	1			
Bantayan	77	42			
Barili	33	21			
Bogo	125	81			

Cholera in the provinces—Continued.

Province and town.	By town.		By province.		Mortality.
	Cases.	Deaths.	Cases.	Deaths.	
Cebu—Continued.					<i>Per ct.</i>
Boljo-on	95	47			
Borbon	1	0			
Carcar	2	2			
Carmen	109	64			
Catmon	39	22			
Cebu	8	6			
Daan-bantayan	89	43			
Dalaguete	14	12			
Danao	19	12			
Ginatilan	33	25			
Madridejos	54	28			
Malabuyoc	5	3			
Mandaue	2	0			
Medellin	77	41			
Moalbual	18	8			
Oslob	17	11			
Samboan	26	18			
Santander	6	4			
San Francisco	38	35			
San Remigio	67	27			
Santa Fe	2	2			
Sibonga	1	1			
Tabogon	65	44			
Tuburan	109	60	1,219	717	58.81
Davao:					
Davao	38	24	38	24	63.15
Ilocos Norte:					
Bacarra	29	24			
Badoc	16	5			
Banna	5	4			
Batac	76	60			
Dingras	6	6			
Laoag	434	337			
Paoay	72	57			
Pasauquin	43	41			
Piddig	1	0			
San Nicolas	105	66			
Sarrat	76	66			
Solsona	2	2			
Vintar	13	7	878	675	76.87
Ilocos Sur:					
Banayoyo	4	3			
Bantay	13	13			
Burgos	3	0			
Cabugao	116	69			
Candon	265	198			
Caoayan	63	36			
Galimuyod	4	4			
Lapog	48	31			
Magsingal	25	20			
Nagbuquel	6	3			
Narvacan	125	91			
Province	1	0			
San Vicente	32	25			
Santa	121	73			
Santa Catalina	35	26			
Santa Cruz	106	81			
Santa Lucia	105	58			
Santa Maria	52	23			
Santiago	11	9			
Santo Domingo	75	86			
Sinait	113	67			
Vigan	110	87	1,433	953	66.50
Iloilo:					
Ajuv	8	3			
Arevalo	7	6			
Balasan	5	0			
Banate	7	7			
Barotac Nuevo	6	3			
Buenavista	2	2			
Cabatuan	43	24			
Dingle	20	8			
Dueñas	3	2			
Dumangas	54	30			
Estancia	2	1			
Guimbal	3	3			
Iloilo	92	71			
Janiuay	8	5			
Jaro	61	45			

Cholera in the provinces—Continued.

Province and town.	By town.		By province.		Mortality.
	Cases.	Deaths.	Cases.	Deaths.	
Iloilo—Continued.					<i>Per ct.</i>
Jordan	9	7			
Lambunao	56	34			
Maasin	0	1			
Manduriao	4	4			
Miagao	35	23			
Oton	31	20			
Passi	40	24			
Pototan	31	22			
San Joaquin	7	1			
San Miguel	6	4			
Santa Barbara	152	123			
Sara	74	51			
Tigbauan	1	1	767	525	68.44
Isabela:					
Gabagan	69	31			
Ilagan	85	46			
San Pablo	9	4			
Santa Maria	3	3			
Tumauni	61	28	217	112	51.61
Laguna:					
Alaminos	20	13			
Bay	55	39			
Bifan	50	42			
Cabuyao	74	60			
Calamba	70	54			
Calauan	27	16			
Cavinti	12	8			
Famy	8	8			
Lilio	23	21			
Longos	13	10			
Los Baños	4	5			
Luisiana	9	7			
Lumban	47	43			
Mabitac	4	4			
Magdalena	2	0			
Mayjayjay	1	1			
Nagcarlan	33	23			
Paete	7	6			
Pagsanjan	42	30			
Pangil	1	0			
Pila	31	18			
Rizal	2	1			
San Pablo	58	33			
San Pedro	102	74			
Santa Cruz	28	26			
Santa Maria	6	4			
Santa Rosa	59	40			
Siniloan	23	20	811	606	74.72
Leyte:					
San Isidro	41	18	41	18	43.90
Mindoro:					
Abra de Ilog	4	5			
Calapan	32	22			
Lubang	223	104			
Naujan	118	61			
Province	4	7	381	199	52.23
Misamis:					
Aloran	44	24			
Balingasag	13	4			
Cagayan	12	8			
Jimenez	26	13			
Misamis	18	12			
Oroquieta	15	8			
Plaridel	40	23			
Tagoloan	5	4	173	96	55.49
Mountain:					
Alilem	1	1			
Amburayan	4	0			
Camp One	9	2			
San Gabriel	5	1			
Santol	9	9			
Sudipen	50	25			
Suyo	1	1			
Tagudin	128	77	207	116	56.03
Nueva Ecija:					
Aliaza	100	79			
Bongabon	9	5			
Cabanatuan	29	17			
Cabiao	2	2			
Cuyapo	11	3			
Gapan	26	18			

Cholera in the provinces—Continued.

Province and town.	By town.		By province.		Mortal- ity.
	Cases.	Deaths.	Cases.	Deaths.	
Nueva Ecija—Continued.					<i>Per ct.</i>
Guimba	62	35			
Jaen	2	1			
Licab	72	51			
Lupao	4	2			
Muñoz	9	3			
Nampicuan	3	3			
Peñaranda	3	2			
Quezon	56	41			
Rizal	13	8			
San Isidro	5	3			
San Jose	71	55			
San Leonardo	7	4			
Santa Rosa	7	3			
Santo Domingo	39	31			
Talavera	105	81			
Zaragoza	8	6	643	453	70.45
Occidental Negros:					
Bacolod	32	23			
Bago	23	18			
Cadiz	5	5			
Cauayan	21	8			
Escalante	37	17			
Himamaylan	10	6			
Hinigaran	11	8			
Ilog	14	6			
Isabela	55	30			
Kabancalan	35	15			
La Carlota	25	17			
La Castellana	17	11			
Manapla	20	7			
Murcia	6	6			
Pontevedra	25	15			
Pulupandan	24	14			
Sagay	17	10			
San Carlos	23	8			
San Enrique	1	1			
Saravia	11	10			
Silay	38	29			
Talisay	48	34			
Valladolid	14	14			
Victorias	7	6	519	318	61.27
Oriental Negros:					
Ayquitán	11	7			
Bais	4	3			
Dumaguete	2	2			
Larena	3	3			
Lazi	1	1			
San Juan	24	12			
Siquijor	144	55			
Tanjay	15	8			
Tayasan	2	2			
Tolon	5	4	211	127	60.18
Pampanga:					
Angeles	4	3			
Apalit	101	83			
Arayat	20	16			
Bacolor	9	8			
Candaba	91	77			
Floridablanca	30	25			
Guagua	47	37			
Lubao	123	92			
Macabebe	163	126			
Magalan	4	2			
Masantol	106	81			
Mexico	57	36			
Minalin	20	14			
Porac	20	18			
San Fernando	30	30			
San Luis	98	71			
San Simon	52	39			
Santa Ana	12	12			
Santa Rita	60	52			
Sexmoan	45	35	1,092	857	78.47
Pangasinan:					
Agno	1	1			
Aguilar	158	107			
Alaminos	90	61			
Alcala	191	101			
Anda	9	6			
Asingan	92	84			
Balincaguin	1	1			

Cholera in the provinces—Continued.

Province and town.	By town.		By province.		Mortal- ity.
	Cases.	Deaths.	Cases.	Deaths.	
Pangasinán—Continued.					<i>Per ct.</i>
Balungao	82	51			
Bani	17	11			
Bautista	120	78			
Bayambang	143	113			
Binalonan	161	123			
Binmaley	446	336			
Bolinao	23	11			
Calasiao	333	263			
Dagupan	244	210			
Dasol	28	17			
Labrador	121	88			
Lingayen	187	147			
Malasiqui	100	89			
Manoag	185	153			
Mangaldan	135	113			
Mangatarem	145	108			
Mapandan	31	27			
Natividad	76	56			
Pozorrubio	356	283			
Rosales	68	56			
Salasa	273	201			
San Carlos	613	570			
San Fabian	139	114			
San Jacinto	123	101			
San Manuel	13	12			
San Nicolas	254	161			
San Quintin	51	41			
Santa Barbara	68	42			
Santa Maria	33	32			
Santo Tomas	18	11			
Sison	137	98			
Sual	71	42			
Tayug	277	184			
Umingan	153	111			
Urbiztondo	220	125			
Urdaneta	135	90			
Villasis	170	121	6, 296	4, 750	75. 44
Rizal:					
Antipolo	9	4			
Binangonan	59	43			
Cainta	35	31			
Calocan	36	21			
Cardona	2	1			
Las Piñas	11	2			
Makati	18	5			
Malabon	39	30			
Mariquina	74	63			
Montalban	20	14			
Morong	42	31			
Muntinglupa	72	48			
Navotas	9	6			
Parañaque	95	12			
Pasay	65	20			
Pasig	69	46			
Pateros	17	13			
Pililla	113	71			
San Felipe Neri	6	3			
San Juan del Monte	7	3			
San Mateo	62	43			
Tagig	21	14			
Tanay	32	25			
Taytay	77	65			
Tereza	57	37	1, 047	651	62. 17
Romblon:					
Cajidiocan	10	2	10	2	20. 00
Sorsogon:					
Aroroy	25	14			
Bacon	47	38			
Barcelona	23	11			
Bulan	47	40			
Casiguran	35	25			
Cataingan	9	7			
Gubat	8	7			
Irosin	69	36			
Juban	18	7			
Magallanes	51	33			
Masbate	49	34			
Milagros	39	31			
Pilar	4	2			
Sorsogon	78	49	502	334	66. 53

Cholera in the provinces—Continued.

Province and town.	By town.		By province.		Mortality.
	Cases.	Deaths.	Cases.	Deaths.	
Tarlac:					<i>Per ct.</i>
Anao	16	8			
Bamban	1	0			
Camiling	138	110			
Gerona	53	43			
La Paz	49	32			
Mayantoc	26	12			
Moncada	24	15			
Paniqui	49	39			
Pura	21	10			
San Clemente	3	3			
San Manuel	8	6			
Tarlac	45	34			
Victoria	102	67	535	379	70.84
Tayabas:					
Alabat	14	12			
Atimunan	1	0			
Boac	16	9			
Calauag	128	105			
Candelaria	2	1			
Guinayangan	63	58			
Gumaca	44	36			
Infanta	82	69			
Laguinmanoc	1	1			
Lopez	110	83			
Lucban	47	32			
Lucena	107	90			
Macalelong	3	1			
Malvar	3	3			
Mauban	23	18			
Mogpog	25	8			
Mulanay	16	8			
Pagbilao	11	7			
Quezon	14	12			
Sampaloc	61	54			
Sariaya	68	55			
Tayabas	37	32			
Tiaong	44	29			
Unisan	1	1	921	722	78.39
Union:					
Agoo	118	88			
Aringay	103	72			
Bacnotan	146	102			
Balaoan	96	67			
Bangar	138	112			
Bauang	126	83			
Caba	35	23			
Luna	117	95			
Naguilian	64	57			
Rosario	71	49			
San Fernando	124	82			
San Juan	76	62			
Santo Tomas	83	68			
Tubao	30	23	1,327	983	74.07
Zambales:					
San Antonio	0	1			
San Marcelino	23	12			
San Narciso	5	5			
Subic	6	5	34	23	67.64
Zamboanga:					
Zamboanga	7	6	7	6	85.71
Grand total	24,056	17,099	24,056	17,099	71.70

**REPORTS RECEIVED OF BLIND PERSONS LIVING IN THE VARIOUS PROVINCES
OF THE PHILIPPINE ISLANDS.**

Province.	Race.	Children.		Single.		Married.		Wid-owed.		Total.		Grand total.
		Male.	Female.	Male.	Female.	Male.	Female.	Male.	Female.	Male.	Female.	
Abra	Filipino.			11	4	14	11	3	9	28	24	52
Agusan	do		1	4	1	2	1			6	3	9
Albay	do	12	7	63	55	42	15	9	19	126	96	222
Ambos Camarines	do	7	8	47	20	34	3	9	16	97	47	144
Antique	do	3	5	23	17	18	12	10	20	54	54	108
Bataan	do	5	2	23	7	3		5	6	36	15	51
Batanes	do		2	5	5	7	5	3	7	15	19	34
Batangas	do	2	1	35	23	22	15	11	11	70	50	120
Bohol	do	7	1	87	74	44	22	11	13	149	110	259
Bulacan	do	2	2	29	28	17	5	15	17	63	52	115
Cagayan	do	4		20	11	24	7	4	13	52	31	83
Capiz	do	2	2	34	28	37	21	16	37	89	88	177
Cavite	do	7	3	24	20	15	10	4	15	50	48	98
Cebu	do	7	4	42	46	51	25	6	36	106	111	217
Cotabato	do	1			2	5	1			6	3	9
Davao	do			5	3	5	2	1	3	11	8	19
Ilocos Norte	do	3	3	14	22	30	18	9	19	56	62	118
Ilocos Sur	do	8	6	42	25	22	16	11	28	83	75	158
Iloilo	do	7	2	52	42	40	15	22	31	121	90	211
Isabela	(a)											(a)
Laguna	Filipino.	6	2	25	16	22	8	4	17	57	43	100
Lanao	do									2	2	2
Leyte	do	23	9	101	59	59	21	22	19	205	108	313
Mindoro	(a)											(a)
Misamis	Filipino.	7	6	40	14	29	14	11	8	87	42	129
Nueva Ecija	do	2	3	19	9	5	8	4	2	30	22	52
Nueva Vizcaya	do			1				1		2		2
Occidental Negros	do	14	3	46	30	33	18	19	15	112	66	178
Oriental Negros	do	3	2	43	23	17	10	15	9	78	44	122
Palawan	do	2	4	7	4	5	2	7	6	21	16	37
Pampanga	do	13	6	68	42	68	24	27	26	176	98	274
Pangasinan	do	19	19	65	40	62	35	18	30	164	124	288
Rizal	do	2	3	22	25	35	13	15	17	74	58	132
Romblon	do	3	1	7	15	13	3	3	3	26	22	48
Samar	do	14	7	69	38	30	13	12	9	125	67	192
Sorsogon	do	5	1	17	11	15	7	1	5	38	24	62
Sulu	(a)											(a)
Surigao	Filipino.	7	8	10	6	4		3	2	24	16	40
Tarlac	do	8	4	13	15	24	9	6	15	51	43	94
Tayabas	do	12	4	23	24	28	7	6	9	69	44	113
Union	do	3	2	19	9	14	7	7	11	43	29	72
Zambales	do	2	3	13	8	11	5	7	11	33	27	60
Zamboanga	do	1		3				1		5		5
Total		223	136	1,171	821	906	408	338	516	2,638	1,881	4,519

^a No report received from this province.

**REPORTS RECEIVED OF INSANE PERSONS LIVING IN THE VARIOUS PROVINCES
OF THE PHILIPPINE ISLANDS.**

Province.	Race.	Children.		Single.		Married.		Widowed.		Total.		Grand total.
		Male.	Female.	Male.	Female.	Male.	Female.	Male.	Female.	Male.	Female.	
Abra	Filipino	3	1	19	10	11	8	2	7	35	26	61
Agusan	do			2						2		2
Albay	do		2	45	34	12	14	2	8	59	58	117
Ambos camarines	do	2	3	34	20	15	9	3	5	54	37	91
Antique	do			39	17	14	14	1	4	54	35	89
Bataan	do			10	2	4	4	4	5	18	11	29
Batanes	do		1	10	11	3	1	2	1	16	14	30
Batangas	do	1		45	22	16	9	5	6	67	37	104
Bohol	do	3	8	194	132	40	28	5	8	242	176	418
Bulacan	do			33	19	7	9	2	6	42	34	76
Cagayan	do	1		17	6	4	8	2		24	14	38
Capiz	do			27	22	14	22	4	16	45	60	105
Cavite	do			19	13	9	5	3	8	31	26	57
Cebu	do	10	2	117	46	25	15	8	16	160	79	239
Cotabato	do	1					1			1		2
Davao	do			7		4	1		4	11	5	16
Ilocos Norte	do		1	45	27	22	6	3	4	70	38	108
Ilocos Sur	do			66	28	21	10	8	7	95	45	140
Iloilo	do	1		59	40	24	22	9	16	93	78	171
Isabela	(a)											(a)
Laguna	Filipino	1		22	10	5	7	3	5	31	22	53
Lanao	do			1					1		2	2
Leyte	do	6	1	95	44	24	18	8	7	133	70	203
Mindoro	(a)											(a)
Misamis	Filipino	3		61	29	15	5	8	7	87	41	128
Nueva Ecija	do			11	5	3	5	1	2	15	12	27
Nueva Vizcaya	do			3						3		3
Occidental Negros	do			39	15	14	12	3	9	56	36	92
Oriental Negros	do			74	32	11	7	6	2	91	41	132
Palawan	do	5	5	17	11		3	2	3	24	22	46
Pampanga	do	1		16	13	13	10	2	7	32	50	62
Pangasinan	do	3	4	63	25	53	24	11	25	130	78	208
Rizal	do	4		19	13	11	13	4	5	38	31	69
Romblon	do	2		6	6	4	2	1	1	13	9	22
Samar	do		3	66	36	20	12		5	86	56	142
San Lazaro Hospital	(b)	3	1	142	38	131	53	13	23	289	115	404
Sorsogon	Filipino			20	6	4	3	2	2	26	11	37
Sulu	(a)											(a)
Surigao	Filipino	1		3	2	3	2		1	7	5	12
Tarlac	do	1		9	3	6	1		1	16	5	21
Tayabas	do	6	2	77	53	16	21	5	6	104	82	186
Union	do			24	15	12	14	9	4	45	33	78
Zambales	do			18	11	4	8			22	19	41
Zamboanga	do			1	3			1	1	2	4	6
Total		59	34	1,574	820	594	406	142	238	2,369	1,498	3,867

^a No insane persons were reported in this province during this period.

^b Americans, 7; other Europeans, 16; Filipinos, 374; Chinese, 3; all others, 4. Total, 404.

REPORT OF SERA.

	Remain- ing at the beginning of the year.	Received from the Bureau of Science.	Total to be ac- counted for.	Issued.	Remain- ing at end of the year.
Anti diphtheritic serum (units)	1,305,000	290,000	1,595,000	1,524,000	71,000
Anti dysenteric serum (ampoules)		334	334	334	
Anti tetanic serum (units)		1,815,000	1,815,000	1,815,000	
Anti typhoid vaccine (ampoules)		422	422	422	
Gonococcus vaccine (ampoules)		54	54	54	
Normal horse serum (ampoules)		6	6	6	
Staphylococcus vaccine (ampoules)		10	10	10	

AMOUNT OF VACCINE VIRUS DISTRIBUTED BY THE PHILIPPINE HEALTH SERVICE.

	Units.
Amount on hand January 1, 1919.....	21,100
Received from the Bureau of Science.....	9,860,000
Total to be accounted for.....	9,881,100
Distributed as per itemized statement.....	9,822,000
Remaining on hand December 31, 1919.....	59,100

PLACES AT WHICH VACCINE VIRUS WAS DISTRIBUTED.

Province:	Units.
Abra	74,000
Albay	487,000
Ambos Camarines.....	299,400
Antique	66,050
Bataan	58,300
Batanes	7,000
Batangas	282,000
Benguet	7,800
Bohol	256,000
Bukidnon	8,000
Bulacan	112,300
Cagayan	326,300
Capiz	186,000
Cavite	156,300
Cebu	881,400
Culion Leper Colony.....	3,000
Cuyo Hospital.....	500
Ilocos Norte.....	549,600
Ilocos Sur.....	253,000
Iloilo	677,000
Isabela	236,800
Laguna	117,800
Leper Collection Trip.....	1,000
Leyte	640,250
Masbate	22,000
Mindanao	37,000
Mindoro	30,000
Misamis	156,000
Mountain	216,600
Nueva Ecija.....	260,400
Nueva Vizcaya.....	27,000
Occidental Negros.....	233,000
Oriental Negros.....	148,000
Palawan	16,000
Pampanga	117,650
Pangasinan	387,000
Rizal	258,000
Romblon	69,100
Samar	251,500
Sorsogon	144,100
Surigao	162,500
Tarlac	82,000
Tayabas	256,200
Union	167,350
Zambales	58,600
Zamboanga	133,500
Total	8,914,300
Manila:	
Health districts.....	377,650
Other institutions.....	30,050
Total	407,700
Grand total.....	9,322,000

VACCINATIONS, CALENDAR YEAR 1919.

[Closed February 18, 1920.]

	Vaccina- tions.	Inspec- tions.	Positive.	Negative
City of Manila:				
Health District No. 1, Intramuros	48,275	12,189	7,528	4,661
Health District No. 2, Meisic	34,908	26,818	11,945	14,873
Health District No. 4, Sampaloc	99,132	58,643	39,883	18,760
Health District No. 5, Tondo	62,779	12,838	5,290	7,548
Health District No. 6, Paco	55,618	22,843	6,465	16,378
Total	360,712	133,331	71,111	62,220
Province:				
Abra	87,683	74,771	42,783	31,988
Albay	351,844	239,013	193,370	45,643
Ambos Camarines	250,302	171,202	131,233	39,969
Antique	86,463	79,105	50,358	28,747
Bataan	45,866	28,243	19,543	8,700
Batangas	252,427	90,208	61,230	28,978
Bohol	288,472	237,228	160,591	76,637
Bulacan	97,357	48,068	31,600	16,468
Cagayan	183,315	107,115	69,021	38,094
Capiz	166,136	155,504	119,763	35,741
Catanduanes	65,740	35,979	24,779	11,200
Cavite	174,497	126,639	73,223	53,416
Cebu	564,932	489,750	308,927	180,823
Ilocos Norte	431,924	293,577	150,281	143,296
Ilocos Sur	272,729	184,877	117,174	67,703
Iloilo	550,147	178,126	130,439	47,687
Isabela	66,604	51,574	37,839	13,735
Laguna	140,175	73,405	46,609	26,796
Leyte	723,935	429,726	281,931	147,795
Mindoro	20,407	12,368	6,329	6,039
Misamis	167,182	82,609	52,471	30,138
Mountain	108,434	71,783	57,423	14,360
Nueva Ecija	165,171	118,956	79,203	39,753
Nueva Vizcaya	27,154	25,818	20,166	5,652
Occidental Negros	208,021	169,756	122,921	46,835
Oriental Negros	151,279	124,328	84,891	39,437
Palawan	7,237	5,136	2,883	2,253
Pampanga	105,884	45,562	28,941	16,621
Pangasinan	364,976	323,394	220,699	102,695
Rizal	214,371	133,566	77,041	56,525
Romblon	59,635	28,389	18,630	9,759
Samar	183,907	110,357	62,680	47,677
Sorsogon	156,865	61,902	42,106	19,796
Tarlac	79,467	71,839	49,592	22,247
Tayabas	258,654	205,915	145,601	60,314
Union	151,809	139,953	88,190	51,763
Zambales	46,480	41,905	29,360	12,545
Total	7,277,481	4,867,646	3,239,821	1,627,825
Grand total	7,638,193	5,000,977	3,310,932	1,690,045

MORTALITY AMONG GOVERNMENT EMPLOYEES.

	Amer- icans.	Fili- pinos.
Average number of employees	816	10,952
Deaths reported:		
From illness	10	55
From violence	2	28
Total	12	83
Deaths from illness:		
Average years of service	10.32	7.14
Average age at death	43.64	35.09
Annual deathrate per thousand	12.25	5.02
Death from violence:		
Average years of service	5.88	2.28
Average age at death	40.21	25.44
Annual deathrate per thousand	2.45	2.55
Total deaths:		
Average years of service	8.45	5.74
Average age at death	42.29	33.53
Annual deathrate per thousand	14.70	7.57
Both nationalities:		
Population	11,768	
Number of deaths	95	
Average years of service	6.17	
Average age at death	34.30	
Annual deathrate per thousand	8.07	

By sexes: males, 85; females, 10.

ALBAY HOSPITAL.

Patients remaining over from previous year	11
Patients admitted during the year	1,053
Patients discharged during the year	930
Patients died during the year	123
Patients remaining December 31st	11
By nationality:	
Filipinos	1,006
Americans	5
Spaniards	22
Chinese	14
Others	6
Total	1,053
Male patients	621
Female patients	432
Total	1,053
By ages:	
Below 10 years	616
10 to 20 years	154
20 to 30 years	133
30 to 40 years	70
40 to 50 years	47
50 to 70 years	33
Total	1,053

Albay Hospital—Continued.

SUBSISTENCE.

Number of patients subsisted during the year.....	1,053
Number of attendants subsisted during the year.....	575
Number of employees subsisted during the year.....	12
Total	1,640

Total number of days subsisted.....	24,220
Average number of persons subsisted per day.....	67
Total cost of subsistence during the year.....	P14,532.00
Average expended per person per day.....	.60
Received from patients during the year.....	4,901.11
Expended:	
Salaries and wages with bonus.....	7,835.97
Consumption of supplies and materials.....	20,787.17
Miscellaneous	1,888.61
Total	30,511.75

Outdoor clinic:	
Consultations	257
Treatments	990
Operations	28
Attendance at residence.....	107

BAQUIO HOSPITAL.

HOSPITAL CASES.

Diseases.	Remaining Dec. 31, 1918.	Admitted.	Died.	Escaped.	Discharged.	Remaining.
1. Typhoid fever		8	1		5	2
4. Malaria	1	31			32	
5. Smallpox		14	1	1	12	
6. Measles		4			4	
10. Influenza	3	31			33	1
14. Dysentery	1	31	2		29	1
18. Erysipelas		1	1			
19. Other epidemic diseases		8			8	
20. Purulent infection and septicaemia		12			10	2
23. Rabies		5	1		4	
24. Tetanus		1	1			
25. Mycosis		1			1	
27. Beriberi		5	3	1	1	
28. Tuberculosis of the lungs	4	39	3		31	9
31. Abdominal tuberculosis		2	1		1	
34. Tuberculosis of other organs		3			1	2
36. Rickets		1			1	
37b. Syphilis, secondary	1	1			2	
38b. Gonococcus infection		2			2	
42. Cancer and other malignant tumor of the female genital organs		2	1		1	
47. Acute articular rheumatism		16			16	
48. Chronic rheumatism and gout		3			3	
50. Diabetes		1			1	
54. Anaemia, chlorosis		10	1		9	
56. Alcoholism (acute or chronic)		3			3	
62. Locomotor ataxia		1			1	
69. Epilepsy		2			2	
71. Convulsions of infants		1			1	
72. Chorea		2			1	1
73. Neuralgia and neuritis		1			1	
74. Other diseases of the nervous system		13			13	
75a. Follicular conjunctivitis		3			3	
75c. Other diseases of the eyes and their annexa		2			2	
76. Diseases of the ears		1			1	
77. Pericarditis		1			1	
79. Organic diseases of the heart		2			2	
81. Diseases of the arteries, arterioma aneurysm, etc.		1			1	
83. Diseases of the veins (varices, haemorrhoids, phlebitis, etc.)	1	1	1		1	
84. Diseases of the lymphatic system (lymphangitis, etc.)		1			1	
86. Diseases of the nasal fossae		1			1	
87. Diseases of the larynx		1			1	
89. Acute bronchitis		47			49	
90. Chronic bronchitis	2	4			4	
91. Bronchopneumonia	1	15	2		14	
92. Pneumonia		3	1		2	
94. Pulmonary congestion, pulmonary apoplexy		1			1	

Baguio Hospital—Continued.

HOSPITAL CASES—Continued.

Diseases.	Remaining Dec. 31, 1918.	Admitted.	Died.	Escaped.	Discharged.	Remaining.
96. Asthma.....		2			2	
199b. Other diseases of the mouth and annexe.....		2			2	
100. Diseases of the pharynx.....		3			3	
102. Ulcer of the stomach.....		4	1		3	
103. Other diseases of the stomach (cancer excepted).....	1	36	1		36	
104. Diarrhoea and enteritis (under 2 years).....		6			6	
105. Diarrhoea and enteritis (2 years and over).....		13	1		10	2
107. Intestinal parasites.....		31			31	
108. Appendicitis and typhlitis.....		12			12	
109. Hernia, intestinal obstruction.....		1	1			
110a. Diseases of the anus and faecal fistulas.....		2			2	
115b. Other diseases of the intestines.....		5			5	
115. Other diseases of the liver.....		1		1		
116. Diseases of the spleen.....		1			1	
117. Simple peritonitis (nonpuerperal).....		1	1			
118. Other diseases of the digestive system (cancer and tuberculosis excepted).....		12			12	
119. Acute nephritis.....		3			3	
120. Bright's diseases.....		8	4	1	2	1
122. Other diseases of the kidneys and annexe.....		4			4	
123. Calculi of the urinary passages.....		1			1	
124. Diseases of the bladder.....		1			1	
125. Diseases of the urethra, urinary abscess, etc.....		2			2	
126. Diseases of the prostate.....		1			1	
127. Nonvenereal diseases of the male genital organs.....		1			1	
129. Uterine tumor (noncancerous).....		1			1	
130b. Other diseases of the uterus.....		2			2	
131. Cysts and other tumors of the ovary.....		2			2	
132. Salpingitis and other diseases of the female genital organs.....		1			1	
134a. Normal labor.....	1	48			49	
134b. Accidents of pregnancy.....		12			12	
135. Puerperal haemorrhage.....		2			2	
136. Other accidents of labor.....		5			4	1
137. Puerperal septicaemia.....		1			1	
142. Gangrene.....		1		1		
143. Furuncle.....		3			3	
144. Acute abscess.....	1	14			15	
145. Scabies.....		6		1	5	
145c. Other diseases of the skin and annexe.....		8			7	1
146. Diseases of the bones (tuberculosis excepted).....		2			2	
150.(3) Other congenital malformation.....		2			2	
151. Congenital debility, icterus, and sclerema.....		1	1			
151(2) Congenital debility.....		1	1			
153. Lack of care.....		9	1		8	
164. Poisoning by food.....		5			5	
165b. Other acute poisonings.....		1			1	
167. Burns (conflagration excepted).....		2			2	
171. Traumatism by cutting or piercing instruments.....		17			17	
172. Traumatism by fall.....		7	1		6	
173. Traumatism in mines and quarries.....		2			2	
175. Traumatism by other crushing (vehicles, railways, landslides, etc.).....		8		1	6	1
176. Injuries by animals.....		1			1	
178. Excessive cold.....		1			1	
183. Homicide by cutting or piercing instruments.....		3			3	
185a. Dislocations.....		3			3	
185b. Sprains.....		4			4	
185c. Fractures (cause not specified).....		5			5	
186. Other external violence.....		6			6	
187. Ill defined organic diseases.....		2	1		1	
189a. Cause of death not specified or ill defined.....		4	1		3	
Total.....	17	683	35	7	634	24

Albay Hospital—Continued.
LABORATORY EXAMINATIONS.

Specimens.	Nationality.					Total.
	Ameri- cans.	Euro- peans.	Filipi- nos.	Chinese.	Japa- nese.	
Blood.....	18	9	29	1	1	58
Feces.....	26	27	182	2	8	245
Pus.....	1	0	3	0	0	4
Sputum.....	7	1	50	0	1	58
Urine.....	18	29	174	1	4	326

SUMMARY AND MISCELLANEOUS.

	Number.
Patients remaining from fiscal year 1918.....	17
Patients admitted from January 1 to December 31, 1919.....	683
Hospital cases during 1919.....	700
Patients remaining in hospital on December 31, 1919.....	24
Visits to hospital clinic.....	3,033
Patients who attended hospital clinic.....	1,925
Surgical dressings.....	1,235
Prescriptions filled.....	2,816
Laboratory examinations made.....	436
Major operations performed.....	10
Minor operations performed.....	76
Physical examinations.....	45
Americans treated in hospital.....	51
Filipinos treated in hospital.....	610
Europeans treated in hospital.....	22
Japanese treated in hospital.....	11
Chinese treated in hospital.....	6
Male patients treated in hospital.....	415
Female patients treated in hospital.....	285
Deaths in hospital.....	35

NAGA HOSPITAL.

HOSPITAL CASES.

Diseases.	Remaining Dec. 31, 1918.	Admitted.	Died.	Discharge.	Remaining.
1. Typhoid fever.....		17	5	12	
4. Malaria.....	4	313	3	310	4
5. Smallpox.....		4	1	3	
6. Measles.....		6		6	
10. Influenza.....	2	5		7	
12. Asiatic cholera.....		13	6	7	
14. Dysentery.....		21		20	1
18. Erysipelas.....		1		1	
19. Other epidemic diseases.....		1		1	
20. Purulent infection and septichæmia.....		2		2	
22. Anthrax.....		9	1	8	
24. Tetanus.....		5	1	4	
27. Beriberi.....	1	17		18	
28. Tuberculosis of the lungs.....		50		50	
31. Abdominal tuberculosis.....		1		1	
34. Tuberculosis of other organs.....		3		3	
36. Rickets.....		8		8	
37. Syphilis.....		5		5	
38. Gonococcus infection.....		14		14	
42. Cancer and other malignant tumors of the female genital organs.....		3		3	
46. Other tumors (tumors of the female genital organs excepted).....		1		1	
47. Acute articular rheumatism.....		3		3	
48. Chronic rheumatism and gout.....		11		11	
49. Diabetes.....		1		1	
53. Leuchaemia.....		1		1	
54. Anaemia chlorosis.....		20		20	
55. Other general diseases.....		3		3	
61. Simple meningitis.....		2	1	1	
62. Locomotor ataxia.....		1		1	
64. Cerebral hæmorrhage, apoplexy.....		1		1	
66. Paralysis without specified cause.....		9		9	
68. Other forms of mental alienation.....		10		10	
69. Epilepsy.....		1		1	
71. Convulsions of infants.....		6	1	5	

Naga Hospital—Continued.

HOSPITAL CASES—Continued.

Diseases.	Remaining Dec. 31, 1918.	Admitted.	Died.	Discharged.	Remaining.
72. Chorea		1		1	
73. Neuralgia and neuritis		3		2	1
74. Other diseases of the nervous system		11		11	
75. Diseases of the eyes and their annexa		9		9	
76. Diseases of the ear		5		5	
79. Organic diseases of the heart		2	1	1	
83. Diseases of the veins (varices, haemorrhoids, phlebitis, etc.)		4		4	
84. Diseases of the lymphatic system (lymphangitis, etc.)		5		5	
85. Haemorrhage; other diseases of the circulatory system		3	1	2	
89. Acute bronchitis		36	2	33	1
90. Chronic bronchitis		10		9	1
91. Broncho pneumonia		13	2	11	
92. Pneumonia		7	1	6	
93. Pleurisy		3	1	2	
94. Pulmonary congestion, pulmonary apoplexy		11	1	10	
96. Asthma		4		4	
99. Diseases of the mouth and annexa		2		2	
100. Diseases of the pharynx		2		2	
102. Ulcer of the stomach		3		3	
103. Other diseases of the stomach (cancer excepted)		45	1	43	1
104. Diarrhoea and enteritis (under 2 years)		15	1	14	
105. Diarrhoea and enteritis (2 years and over)		11		11	
106. Ankylostomiasis		33		33	
107. Intestinal parasites		45		45	
108. Appendicitis and typhlitis	1	6		6	1
109. Hernia, intestinal obstruction		2		2	
110. Other diseases of the intestine		4	1	3	
111. Acute yellow atrophy of the liver		2	1	1	
113. Cirrhosis of the liver		1		1	
115. Other diseases of the liver		8		8	
116. Diseases of the spleen		8		7	1
118. Other diseases of the digestive system (cancer and tuberculosis excepted)		16		16	
119. Acute nephritis		2		2	
120. Bright's diseases		2		2	
123. Calculi of the urinary passages		1		1	
124. Diseases of the bladder		11		11	
125. Other diseases of the urethra, urinary abscess, etc		1		1	
127. Nonvenereal diseases of the male genital organs		3		3	
128. Uterine haemorrhage (nonpuerperal)		2		2	
131. Cists and other tumors of the ovary		2		2	
132. Salpingitis and other diseases of the female genital organs		14		14	
133. Nonpuerperal diseases of the breast (cancer excepted)		3		3	
134a. Normal delivery		5	1	5	
136. Other accidents of labor		4	1	3	
137. Puerperal septicaemia		5	3	2	
141. Puerperal diseases of the breast		2		2	
142. Gangrene		2		2	
143. Furuncle		2		2	
144. Acute abscess		15		15	
145c. Other diseases of the skin and annexa		32		31	1
146. Diseases of the bones (tuberculosis excepted)		2		2	
147. Diseases of the joints (tuberculosis and rheumatism excepted)		1		1	
148. Amputation		1			1
149. Other diseases of the organs of locomotion		1		1	
152. Other diseases peculiar to early infancy		2		2	
153. Lack of care		14		14	
154. Senility		1		1	
171. Traumatism by cutting or piercing instruments		5		5	
175. Traumatism by other crushing (vehicles, railways, landslides, etc.)		4		4	
176. Injuries by animals		4		3	1
185. Fractures (caused not specified)		2		2	
186. Other external violence		4		4	
Total	8	1,047	36	1,005	14

NAGA HOSPITAL.
LABORATORY EXAMINATIONS.

Specimen.	Number.
Blood	87
Fæces	46
Sputum	25
Urine	61
Miscellaneous	12
Total	181

SUMMARY AND MISCELLANEOUS.

Number of patients admitted.....	1,047
Patients:	
Charity	622
Government pay	79
Private	803
Government free	43

BAYOMBONG HOSPITAL.

Diseases.	Remaining Dec. 31, 1918.	Admitted.	Died.	Discharged.	Remaining.
1. Typhoid fever		2		2	
4. Malaria		38		38	
14. Dysentery		2		2	
20. Purulent infection and septichæmia		9		9	
23. Rabies		1		1	
27. Beriberi		2		2	
37. Syphilis		1		1	
47. Acute articular rheumatism		1		1	
73. Neuralgia and neuritis		2		2	
75c. Other diseases of the eyes and their annexa		2		2	
78. Acute endocarditis		1	1		
89. Acute bronchitis		11		11	
91. Bronchopneumonia		1		1	
98. Other diseases of the respiratory system (tuberculosis excepted)		1		1	
99a. Diseases of the teeth and gums		1		1	
103. Other diseases of the stomach (cancer excepted)		6		6	
104. Diarrhoea and enteritis (under 2 years)		1		1	
105. Diarrhoea and enteritis (2 years and over)		2		2	
107. Intestinal parasites		1		1	
124. Diseases of the bladder		2		2	
125. Diseases of the urethra, urinary abscess, etc.		1		1	
130b. Other diseases of the uterus		2		2	
134b. Accidents of pregnancy		1		1	
143. Furuncle		1		1	
144. Acute abscess		4		4	
145c. Other diseases of the skin and annexa		1		1	
171. Traumatism by cutting or piercing instruments		1		1	
185c. Fractures (cause not specified)		2		2	
189. Cause of death not specified or ill-defined		1		1	
Total		101	1	100	

BONTOC HOSPITAL.
HOSPITAL CASES.

Diseases.	Remaining Dec. 31, 1918.	Admitted.	Died.	Discharged.	Remaining.
1. Typhoid fever		3		2	1
4. Malaria		43	2	37	4
6. Measles	1				
10. Influenza	14	16		1	
14. Dysentery		16		28	2
19. Other epidemic diseases		17	6	10	
20. Purulent infection and septichæmia	3	2	1	17	
28. Tuberculosis of the lungs		7	2	5	
31. Abdominal tuberculosis		4	2	5	2

Bontoc Hospital—Continued.

HOSPITAL CASES—Continued.

Diseases.	Remaining Dec. 31, 1918.	Admitted.	Died.	Discharged.	Remaining.
34. Tuberculosis of other organs		1		1	
35. Disseminated tuberculosis		1		1	
36. Rickets		3		2	1
37c. Syphilis, tertiary		1			1
38b. Gonococcus infection		2		2	
45. Cancer and other malignant tumors of other organs or of organs not specified		1	1		1
46. Other tumors (tumors of the female genital organs excepted)		1			
47. Acute articular rheumatism		8		8	
50. Diabetes		2		2	
53. Leuchaemia		2		2	
61. Simple meningitis		1	1		
64. Cerebral hæmorrhage, apoplexy		2	1	1	
68. Other forms of mental alienation		4	1	4	
74. Other diseases of the lymphatic system		9		8	1
75a. Follicular conjunctivitis	1	3		4	
75c. Other diseases of the eyes and their annexa		4		4	
76. Diseases of the ears	1	4		5	
81. Diseases of the arteries, atheroma, aneurysm, etc.		1		1	
83. Diseases of the veins (varices hæmorrhoids, phlebitis, etc.) ..		2		2	
84. Diseases of the lymphatic system (lymphangitis, etc.)		3		3	
86. Diseases of the nasal fossae		1		1	
87. Diseases of the larynx		2		2	
88. Diseases of the thyroid body		1		1	
89. Acute bronchitis		10		10	
90. Chronic bronchitis		12		12	
91. Bronchopneumonia		7		7	
92. Pneumonia		1	1		
96. Asthma		1		1	
99b. Other diseases of the mouth and annexa		1		1	
100. Diseases of the pharynx		2		2	
101. Disease of the oesophagus		3		3	
103. Other diseases of the stomach (cancer excepted)		15		15	
104. Diarrhoea and enteritis (under 2 years)		2		2	
105. Diarrhoea and enteritis (2 years and over)	1	28	2	27	
107. Intestinal parasites		5		5	
110b. Other diseases of the intestine		7		7	
113. Cirrhosis of the liver		1	1		
115. Other diseases of the liver		1		1	
118. Other diseases of the digestive system (cancer and tuberculosis ex- cepted)		1		1	
119. Acute nephritis		1		1	
120. Bright's diseases		1		1	
123. Calculi of the urinary passage	2	2		3	1
124. Diseases of the bladder		3		3	
125. Diseases of the urethra, urinary abscess, etc.		2		2	
127. Nonvenereal diseases of the male genital organs		2		2	
130b. Other diseases of the uterus		4		4	
131. Cysts and other tumors of the ovary		1		1	
133. Nonpuerperal diseases of the breast (cancer excepted)		2		2	
134a. Normal labor		19		19	
134b. Accidents of pregnancy	1	2		3	
135. Puerperal hæmorrhage		1		1	
136. Other accidents of labor		1		1	
140. Following childbirth (not otherwise defined)	1	1		1	
142. Gangrene		1	1		
143. Furuncle		7		7	
144. Acute abscess		3		3	
145a. Trychophytosis (tinea and peladas)		1		1	
145b. Scabies		7		6	1
145c. Other diseases of the skin and annexa	1	70		64	7
146. Diseases of the bones (tuberculosis excepted)		1		1	
147. Diseases of the joints (tuberculosis and rheumatism excepted) ..		1			
149. Other diseases of the organs of locomotion		2		2	
171. Traumatism by cutting or piercing instruments	1	15		14	2
172. Traumatism by fall		1		1	
175. Traumatism by other crushing (vehicles, railroads, landslides, etc.) ..		4		4	
176. Injuries by animals		2		2	
185a. Dislocations		2		2	
185c. Fractures (cause not specified)		3		3	
186. Other external violence	1	1		2	
189a. Cause of death not specified or ill-defined		4		4	
Total	28	434	21	416	25

a 2 escaped.

Number of cases treated in outdoor department at the Bontoc Hospital, 2,452.

Bontoc Hospital—Continued.

LABORATORY EXAMINATIONS.

Specimen.	Americans.	Euro-peans.	Filipinos.	Others.	Igorots.	Total.
Blood			7		30	37
Fæces			11	3	52	66
Sputum			6		14	20
Urine			28	2	46	76
Gastric content			1			1
Total			53	5	142	200

CHINESE HOSPITAL—SICK REPORT.

[Dr. Tee Han Kee, Physician in Charge.]

In hospital at last report	42
Received during the year	852
Discharged	738
Died	122
Remaining in hospital at end of year	31

CULION LEPER COLONY.

BIRTHS.

Total births for one year	48
Legitimate	23
Illegitimate	25
Conceived at the Colony	45
Deaths among these births	16

MARRIAGES.

(By age and civil status.)

Ages.	Males.		Females.									
			To 20 yrs.		To 25 yrs.		To 30 yrs.		To 40 yrs.		Over 50 yrs.	
	Single.	Widowed.	Single.	Widowed.	Single.	Widowed.	Single.	Widowed.	Single.	Widowed.	Single.	Widowed.
From 15 to 20 years	8		6		2							
From 21 to 25 years	18	2	6		9	2	1	1			1	
From 26 to 30 years	14	8	4		4	5	4	3	1	1		
From 31 to 40 years	11	3	1		2	2	3	1	3			2
From 41 to 50 years		1					1					
Over 50 years												
Total	51	14	17		17	9	9	5	4	1	1	2

In these sixty-five marriages, the contracting parties were all Filipinos; there were no divorced persons or persons of known relationship amongst them.

Culion Leper Colony—Continued.

DEATHS.

Classified by International List.

	Number.
1. Typhoid fever.....	2
4. Malaria.....	42
Malaria with leprous cachexia.....	2
5. Varioloid.....	3
10. Influenza.....	7
14. Dysentery.....	51
17. Leprous fever.....	2
Leprous cachexia.....	72
20. Septichæmia.....	2
22. Malignant pustule.....	1
27. Beriberi.....	13
Beriberi infantile.....	2
28. Tuberculosis, pulmonary.....	95
31. Tuberculosis, intestinal.....	16
34. Tuberculosis, osea.....	5
40. Cancer of the stomach.....	1
45. Cancer of the neck.....	1
46. Tumor.....	1
47. Rheumatism, leprous.....	3
Rheumatism, of the heart.....	7
54. Anemia.....	5
61. Meningitis, leprous.....	4
64. Cerebral congestion.....	6
66. Paralysis.....	2
71. Convulsion, infantile.....	5
79. Organic diseases of the heart.....	46
80. Angor pectoris.....	1
81. Aneurism, abdominal.....	1
84. Adenitis.....	2
85. Hæmorrhage, internal.....	1
87. Laryngitis, leprous.....	3
90. Bronchitis.....	30
92. Pneumonia.....	19
94. Congestion, pulmonary.....	1
96. Asthma.....	2
98. Hæmorrhage, pulmonary.....	8
103. Gastritis, leprous.....	17
104. Gastro-enteritis, acute.....	5
105. Gastro-enteritis, chronic.....	25
107. Ascariasis.....	1
108. Appendicitis.....	1
109. Hernia, strangulated.....	1
115. Hepatitis.....	1
117. Peritonitis.....	1
120. Nephritis.....	16
137. Puerperal infection.....	1
140. Puerperal accident.....	1
142. Gangrene.....	25
147. Arthritis, purulent.....	2
151. Stillbirth.....	2
152. Congenital debility.....	3
154. Senile debility with leprous cachexia.....	14
189. Ill-defined diseases.....	8
Total.....	583

MOVEMENT OF POPULATION, BY MONTHS.

Months.	Admis- sions.	Readmis- sions.	Births.	Deaths.	Dis- charges.	Escapes.	Mar- riages.
January.....			8	50	1		2
February.....			5	44			3
March.....	1		5	53			5
April.....	148	2	4	79	1		6
May.....			5	60			1
June.....			1	66			8
July.....			2	71			4
August.....			2	32			2
September.....	266	6		46	12		3
October.....			4	20			6
November.....	136	4	5	33			10
December.....			7	29			15
Total.....	551	12	48	583	14		65

Culion Leper Colony—Continued.

POPULATION, BY NATIONALITY.

Nationality.	Number.		Total.
	Male.	Female.	
Americans	9		9
Chamorro	12	2	14
Chinese	8		8
Filipinos	2,994	1,681	4,675
Total	3,023	1,683	4,706

POPULATION, BY CIVIL CONDITION.

Civil condition.	Number.		Total.
	Male.	Female.	
Single	830	259	1,089
Married	1,369	862	2,231
Widowed	129	170	299
Divorced	1		1
Children	694	392	1,086
Total	3,023	1,683	4,706

CULION LEPER COLONY.

Status.	Americans.		Europeans.		Filipinos.		Chinese.		Others.		Total.
	Male.	Female.	Male.	Female.	Male.	Female.	Male.	Female.	Male.	Female.	
Remaining December 31, 1918.	7				3,002	1,662	8		11	2	4,692
Admitted	2				365	182	1		1		551
Readmitted	1				10	1					12
Born					25	23					48
Died					400	182	1				583
Discharged	1				8	5					14
Remaining	9				2,994	1,681	8		12	2	4,706

CUYO HOSPITAL.
HOSPITAL CASES.

Diseases.	Remaining De- cember 31, 1918.	Admitted.	Died.	Discharged.	Remaining.
1. Typhoid fever.....		1	1		
3. Relapsing fever.....		4		4	
4. Malaria.....		28		28	
10. Influenza.....		10		10	
14. Dysentery.....		4	2	2	
28. Tuberculosis of the lungs.....		1		1	
46. Other tumors (tumors of the female genital organs excepted).....		7		7	
54. Anaemia, chlorosis.....		1		1	
68. Other forms of mental alienation.....		1		1	
75c. Other diseases of the eyes and their annexa.....		2		2	
87. Diseases of the larynx.....		1		1	
89. Acute bronchitis.....		3		3	
90. Chronic bronchitis.....		3		3	
91. Bronchopneumonia.....		2		2	
92. Pneumonia.....		1		1	
96. Asthma.....		3		3	
98. Other diseases of the respiratory system (tuberculosis excepted).....		2		2	
99b. Other diseases of the mouth and annexa.....		6		6	
103. Other diseases of the stomach (cancer excepted).....		17		17	
104. Diarrhoea and enteritis (under 2 years).....		3	1	2	
105. Diarrhoea and enteritis (2 years and over).....		5		5	
107. Intestinal parasites.....		10		10	
116. Diseases of the spleen.....		1		1	
117. Simple peritonitis (nonpuerperal).....		1	1		
128. Uterine hæmorrhage (nonpuerperal).....	1			1	
130b. Other diseases of the uterus.....		3		3	
134a. Normal labor.....		2		2	
143. Furuncle.....		4		4	
145b. Scabies.....		1		1	
145c. Other diseases of the skin and annexa.....		2		2	
147. Diseases of the joints (tuberculosis and rheumatism excepted).....		1		1	
148. Amputations.....		1		1	
153. Lack of care.....		1		1	
155a. Venomous bites and stings.....		1		1	
171. Traumatism by cutting or piercing instruments.....	1	4		5	
175. Traumatism by other crushing (vehicles, railways, landslides, etc.).....		5		5	
176. Injuries by animals.....		4		4	
185b. Sprains.....		3		3	
185c. Fractures (causes not specified).....		2		2	
Total.....	2	151	5	148	0

PRISON SANITATION.
IWAHIG PENAL COLONY—SICK REPORT.

Diseases.	Remaining Dec. 31, 1918.	Admitted.	Died.	Transferred.	Discharged.	Remaining.
4. Malaria	7	167	1		167	6
4a. Malarial cachexia	2				2	
10. Influenza	5	91			91	5
14. Dysentery		4			4	
17. Leprosy		1			1	
19. Other epidemic diseases		1				1
20. Purulent infection and septichæmia		2				
28. Tuberculosis of the lungs	8	35	10		30	8
30. Tuberculous meningitis		1	1			
33. White swellings		1			1	
47. Acute articular rheumatism		12			12	
48. Chronic rheumatism and gout		4			3	1
50. Diabetes		1			1	
73b. Neuralgia and neuritis		2			2	
74. Other diseases of the nervous system		1			1	
75c. Diseases of the eyes and their annexa		10			10	
78. Acute endocarditis		2	1		1	
79. Organic diseases of the heart		1	1			
84. Diseases of the lymphatic system (lymphangitis, etc.)		2			2	
89. Acute bronchitis		3			2	1
90. Chronic bronchitis	38	83			110	3
91. Bronchopneumonia	3				4	
92. Pneumonia	4	5	4		4	1
93. Pleurisy		1	1			
96. Asthma		2			2	
98. Other diseases of the respiratory system (tuberculosis excepted)		3	1		2	
103. Other diseases of the stomach (cancer excepted)		5			5	
105. Diarrhœa and enteritis (2 years and over)		1			1	
109. Hernia, intestinal obstruction		1	1			
116. Diseases of the spleen		1			1	
119. Acute nephritis		5	1		4	
120. Bright's disease		9	1		8	
127. Nonvenereal diseases of the male genital organs		2			2	
136. Other accident of labor		1			1	
140. Following childbirth (not otherwise defined)		3			3	
143. Furuncle		2			2	
144. Acute abscess		8			8	
145c. Other diseases of the skin and annexa		11			11	
147. Diseases of the joints (tuberculosis and rheumatism excepted)		3			3	
149. Other diseases of the organs of locomotion		15			15	
151. Congenital malformations (stillbirths not included)		1	1			
164. Poisoning by food		1	1			
167. Burns (conflagration excepted)		2				1
171. Traumatism by cutting or piercing instruments	3	60			61	2
176. Injuries by animals		3			3	
186. Other external violence		11			10	1
189a. Causes of deaths not specified or ill-defined		3	1		2	
Total	70	584	26	0	603	25

LEYTE HOSPITAL.

Status.	Number.
Remaining in hospital December 31, 1918	4
Admitted during the year	283
Discharged:	
Recovered	156
Improved	42
Unimproved	19
Died	14
Remaining in hospital at end of the year	6
Patients admitted:	
Ordinary wards	174
Private wards	27
Free wards	32
Cases:	
Medical	159
Surgical	49
Obstetrical	15
Nursery	10
Operations:	
Major	6
Minor	35
Dressings:	
Major	13
Minor	478

PRISON SANITATION.

BILIBID PRISON—LABORATORY EXAMINATION.

	Specimen.	Number.
Blood		2,292
Blood (count)		11
Faeces		13,241
Sputum		3,250
Urine		7,554
Miscellaneous		217
Total		26,565

Number of prescriptions filled.....	10,523
Number of vaccinations made.....	8,629
Number of autopsies held.....	46

BILIBID PRISON REPORT OF SICK.

Diseases.	Remaining Dec. 31, 1918.	Admitted.	Died.	Transferred.	Discharged.	Remaining.
1. Typhoid fever		1			1	
4. Malaria		59			58	1
5. Smallpox	2				2	
6. Measles		1			1	
8. Whooping cough		5			5	
10. Influenza	8	130			133	5
12. Cholera		2		2		
13. Cholera vibrio carrier		16			16	
14. Dysentery	1	211	5		201	6
19. Other epidemic diseases	2	30		1	30	1
20. Purulent infection and septicaemia	1	21			21	1
27. Beriberi	3	49			50	2
28. Tuberculosis of the lungs	43	90	83		22	28
31. Abdominal tuberculosis		7	5		2	
33. White swellings	1	2			3	
34. Tuberculosis of other organs		8			8	
35. Disseminated tuberculosis		1	1			
37. Syphilis		2			2	
37a. Syphilis, primary	1	5			5	1
37b. Syphilis, secondary		1			1	
37c. Syphilis, tertiary	2	8			10	
38a. Soft chancre	1	6			6	1
38b. Gonococcus infection	1	51			47	5
39. Cancer and other malignant tumors of the buccal cavity		2			2	
40. Cancer and other malignant tumors of the stomach, liver		1	1			
44. Cancer and other malignant tumors of the skin		1	1			
46. Other tumors (tumors of the female genital organ excepted)		10	1		8	1
47. Acute articular rheumatism	1	134			132	3
48. Chronic rheumatism and gout	3	13			15	1
49. Scurvy		1			1	
54. Anaemia, chlorosis		3			3	
55. Other general diseases		34			34	
56. Alcoholism (acute or chronic)		1			1	
59. Other chronic poisoning	2	225			220	7
62. Locomotor ataxia		2			1	1
64. Cerebral haemorrhage, apoplexy	1	2	2		1	
66. Paralysis without specified cause		5			2	3
68. Other forms of mental alienation		22		12	2	8
69. Epilepsy		3			3	
75b. Trachoma		3			3	
75c. Other diseases of the eyes and their annexe	4	37			40	1
76. Diseases of the ears		6			6	
78. Acute endocarditis		1	1			
79. Chronic diseases of the heart		5	3		1	1
83. Diseases of the veins (varices, haemorrhage, phlebitis, etc.)	3	13			15	1
84. Diseases of the lymphatic system (lymphangitis)		15			13	2
85. Haemorrhage; other disease of the circulatory system		1			1	
86. Diseases of the nasal fossae		1			1	
90. Chronic bronchitis		1			1	
91. Bronchopneumonia		1			1	
92. Pneumonia	3	35	23		12	3
93. Pleurisy	4	8			12	
96. Asthma	1	30			30	1
98. Other diseases of the respiratory system (tuberculosis excepted)		21			21	
99a. Diseases of the teeth and gums		25			24	1
99b. Diseases of the mouth and annexe		10			10	
100. Diseases of the pharynx	1	3			4	
103. Other diseases of the stomach (cancer excepted)		9			8	1
105. Diarrhoea and enteritis (2 years and over)		49			49	

Prison sanitation—Continued.

BILIBID PRISON REPORT OF SICK—Continued.

Diseases.	Remaining Dec. 31, 1918.	Admitted.	Died.	Transferred.	Discharged.	Remaining.
106. Ankylostomiasis.....	14	1,075			1,087	2
107. Intestinal parasites.....	11	600			611	
108. Appendicitis and typhlitis.....		3			2	1
109. Hernia, intestinal obstruction.....	2	13	1		14	
110a. Diseases of the anus and faecal fistulas.....		12			11	1
110b. Other diseases of the intestines.....	7	7			7	
115. Other diseases of the liver.....	7	3			4	
116. Diseases of the spleen.....	2	2			2	
117. Simple peritonitis (nonpuerperal).....		3	3			
119. Acute nephritis.....	1	1			1	
120. Bright's diseases.....		5	3		2	
124. Diseases of the bladder.....		1			1	
127. Nonvenereal diseases of male genital organs.....	2	38			39	1
128. Uterine haemorrhage (nonpuerperal).....		1			1	
130b. Other diseases of the uterus.....		3			3	
132. Salpingitis and other diseases of the female genital organs.....		2			2	
138. Nonpuerperal diseases of the breast (cancer excepted).....		1			1	
134b. Accidents of pregnancy.....	4	4			8	
136. Other accidents of labor.....	4	4			7	1
142. Gangrene.....		1			1	
143. Furuncle.....		8			8	
144. Acute abscess.....	5	63	1		67	
145. Trichophytosis (tineas and peladas).....	9	204			208	5
145b. Scabies.....	2	31			30	3
145c. Other diseases of the skin and annexa.....		12			12	
146. Diseases of the bones (tuberculosis excepted).....		9			9	
147. Diseases of the joints (tuberculosis and rheumatism excepted).....	2	3			5	
148. Amputations.....		1			1	
149. Other diseases of the organs of locomotion.....		3			3	
150. Congenital malformation (stillbirth not included).....	1	7			8	
154. Senility.....		1	1			
155. Suicide by poison.....		3			3	
167. Burns (conflagration excepted).....		2			2	
170. Traumatism by firearms.....		1			1	
171. Traumatism by cutting or piercing instrument.....	1	29			30	
175. Traumatism by other crushing (vehicles, railroads, landslides, etc.).....		8			8	
183. Homicide by cutting or piercing instruments.....		3	1		2	
185a. Dislocations.....		2			2	
185b. Sprains.....		11			10	1
185s. Fractures (cause not specified).....		5			5	
186. Other external violence.....		43			43	
187. Ill-defined organic disease.....		1			1	
189. Cause of death not specified or ill-defined.....	46	1,260		4	1,269	43
Total.....	192	4,932	139	19	4,822	44

Prison sanitation—Continued.

BILIBID PRISON—REPORT OF DEATHS.

Diseases.	Presidio.				Carcel.				Civil state.				
	Filipinos.		Chinese.		Filipinos.		Chinese.		Total.	Married.	Single.	Widowed.	Unknown.
	Male.	Female.	Male.	Female.	Male.	Female.	Male.	Female.					
14. Dysentery	5								5	2	2	1	
28. Tuberculosis of the lungs	66				12	3	4		85	44	30	11	
81. Abdominal tuberculosis	4				1				5	3		2	
35. Disseminated tuberculosis					1				1		1		
39. Cancer and other malignant tumors of the buccal cavity	1								1			1	
40. Cancer and other malignant tumors of the stomach, liver							1		1	1			
41. Cancer and other malignant tumors of the peritoneum, intestines, rectum	1								1		1		
64. Cerebral hæmorrhage, apoplexy	2				1				3	3			
78. Acute endocarditis	1								1			1	
79. Organic diseases of the heart	1		1				1		3	2	1		
91. Broncho-pneumonia					1				1		1		
92. Pneumonia	15	1			6		2		24	13	7	4	
104. Diarrhoea and enteritis under 2 years	1	1							2		2		
109. Hernia, intestinal obstruction	1								1	1			
115. Other diseases of the liver	3					1			4	3	1		
117. Simple peritonitis (nonpuerperal)	1				1		1		3	2		1	
120. Bright's diseases			1		1		1		3	3			
144. Acute abscess	1								1		1		
154. Senility	1								1			1	
155. Suicide by poison					1				1		1		
183. Homicide by cutting or piercing instruments	1								1	1			
Total	105	2	2		25	4	10		148	78	48	22	

Died in Bilibid Hospital, 143; legally executed, 1; died in San Lazaro Hospital, 4; Total, 148.

SAN LAZARO HOSPITAL.

CHOLERA DEPARTMENT.

Status.	Americans.		Europeans.		Filipinos.		Chinese.		Others.		Total.
	Male.	Female.	Male.	Female.	Male.	Female.	Male.	Female.	Male.	Female.	
Brought forward from 1918					3	3					6
Admitted	35	2	11	3	783	650	23	2	12		1,521
Discharged	34	2	10	3	625	529	18	1	12		1,234
Transferred											
Absconded	1				3	3					7
Died			1		154	119	5	1			280
Remaining					4	2					6

Death rate percentage, 18.336 per cent.

REMARKS.—Three hundred fifty-six cholera carriers; 102 non-cholera cases; remaining in hospital, 4 cholera cases and 2 cholera carriers.

Causes of death other than cholera.—Dysentery, 2; typhoid fever, 2; chronic gastroenteritis, 1.

San Lazaro Hospital—Continued.

DISTRIBUTION OF CHOLERA CASES DURING THE YEAR.

Stations.	January.	February.	March.	April.	May.	June.	July.	August.	September.	October.	November.	December.	Total.
1. Intramuros	8	1	4	6	4	2	52	41	28	61	9	2	218
2. Meisic	2	2	6	5	1	3	71	73	17	19	7	2	208
4. Sampaloc	1	3	3		2	3	52	73	19	21	5	5	187
5. Tondo	9	3	12	4	2	14	119	159	49	16	2		389
6. Paco	2	2	1	2	3		41	35	33	20	4	2	145
Total, city	22	11	26	17	12	22	335	381	146	137	27	11	1,147
Total, province	7	1	1	2	2	3	96	114	96	27	22	3	374
Grand total	29	12	27	19	14	25	431	495	242	164	49	14	1,521

DIPHThERIA DEPARTMENT.

Status.	Americans.		Europeans.		Filipinos.		Chinese.		Others.		Total.
	Male.	Female.	Male.	Female.	Male.	Female.	Male.	Female.	Male.	Female.	
Brought forward from 1918.....											
Admitted	2			1	66	107	1	3			180
Discharged	2			1	50	101					155
Died					12	6	1	2			21
Remaining					4						4

Death rate percentage, 11.66 per cent.

CEREBROSPINAL MENINGITIS DEPARTMENT.

Status.	Americans.		Europeans.		Filipinos.		Chinese.		Others.		Total.
	Male.	Female.	Male.	Female.	Male.	Female.	Male.	Female.	Male.	Female.	
Brought forward from 1918.....											
Admitted					4	1					5
Discharged					2	1					3
Died					2						2
Remaining											

Death rate percentage, 40.00 per cent.

REMARKS.—Only confirmed clinically and microscopically as true cases of cerebro-spinal meningitis, and all died.

DYSENTERY DEPARTMENT.

Status.	Americans.		Europeans.		Filipinos.		Chinese.		Others.		Total.
	Male.	Female.	Male.	Female.	Male.	Female.	Male.	Female.	Male.	Female.	
Brought forward from 1918.....					1						1
Admitted	1				72	30	1				104
Discharged					59	20	1				80
Transferred	1				9	4					14
Absconded											
Died					5	5					10
Remaining						1					1

Death rate percentage, 9.52 per cent.

San Lazaro Hospital—Continued.

ERYSIPELAS DEPARTMENT.

Status.	Americans.		Europeans.		Filipinos.		Chinese.		Others.		
	Male.	Female.	Male.	Female.	Male.	Female.	Male.	Female.	Male.	Female.	Total.
Brought forward from 1918											
Admitted						3				1	4
Discharged						2				1	3
Transferred											
Absconded											
Died						1					1
Remaining											

Death rate percentage, 25 per cent.

HYDROPHOBIA DEPARTMENT.

Status.	Americans.		Europeans.		Filipinos.		Chinese.		Others.		Total.
	Male.	Female.	Male.	Female.	Male.	Female.	Male.	Female.	Male.	Female.	
Brought forward from 1918											
Admitted					1						1
Discharged											
Transferred											
Absconded											
Died					1						1
Remaining											

Death rate percentage, 100 per cent.

MEASLES DEPARTMENT.

Status.	Americans.		Europeans.		Filipinos.		Chinese.		Others.		Total.
	Male.	Female.	Male.	Female.	Male.	Female.	Male.	Female.	Male.	Female.	
Brought forward from 1918					64						64
Admitted					237	59					296
Discharged					300	57					357
Transferred						2					2
Absconded											
Died					1						1
Remaining											

Death rate percentage, 0.27 per cent.

REMARKS.—^a Death due to bronchopneumonia.

MUMPS DEPARTMENT.

Status.	Americans.		Europeans.		Filipinos.		Chinese.		Others.		Total.
	Male.	Female.	Male.	Female.	Male.	Female.	Male.	Female.	Male.	Female.	
Brought forward from 1918					21						21
Admitted					15	1					16
Discharged					35	1	2				38
Transferred											
Absconded											
Died					1						1
Remaining											

Death rate percentage, 2.56 per cent.

REMARKS.—^a Death due to myocarditis and pericarditis.

San Lazaro Hospital—Continued.

SMALLPOX DEPARTMENT.

Status.	Americans.		Europeans.		Filipinos.		Chinese.		Others.		Total.
	Male.	Female.	Male.	Female.	Male.	Female.	Male.	Female.	Male.	Female.	
Brought forward from 1918	1		1		1	1					4
Admitted	3	1	1		42	25			4		76
Discharged	2		2		22	10			2		38
Transferred					5						5
Absconded											
Died	2	1			16	16			2		37
Remaining											

Death rate percentage, 46.25 per cent.

TETANUS DEPARTMENT.

Status.	Americans.		Europeans.		Filipinos.		Chinese.		Others.		Total.
	Male.	Female.	Male.	Female.	Male.	Female.	Male.	Female.	Male.	Female.	
Brought forward from 1918											
Admitted					84	14					48
Discharged					17	6					23
Transferred											
Absconded											
Died					17	8					25
Remaining											

Death rate percentage, 52.08 per cent.

TYPHOID DEPARTMENT.

Status.	Americans.		Europeans.		Filipinos.		Chinese.		Others.		Total.
	Male.	Female.	Male.	Female.	Male.	Female.	Male.	Female.	Male.	Female.	
Brought forward from 1918											
Admitted					38	14			2		54
Discharged					23	5			1		32
Transferred					9	2			1		12
Absconded											
Died					5	1					6
Remaining					1	3					4

Death rate percentage, 11.111 per cent.

REMARKS.—Two paratyphoid; 1 eruptive fever, transferred later as typhoid case to Philippine General Hospital.

GONORRHEA DEPARTMENT.

Status.	Americans.		Europeans.		Filipinos.		Chinese.		Others.		Total.
	Male.	Female.	Male.	Female.	Male.	Female.	Male.	Female.	Male.	Female.	
Brought forward from 1918						1					1
Admitted		1			7	73		2			88
Discharged		1			7	72		2			82
Transferred						a 2					2
Absconded											
Died						b 1					1
Remaining											4

Death rate percentage, 1.12 per cent.

REMARKS.—^a Transferred: 1 to Tuberculosis Department; 1 to Insane Department. ^b Death due to other causes peculiar to infancy.

San Lazaro Hospital—Continued.

SYPHILIS DEPARTMENT.

Status.	Americans.		Europeans.		Filipinos.		Chinese.		Others.		Total
	Male.	Female.	Male.	Female.	Male.	Female.	Male.	Female.	Male.	Female.	
Brought forward from 1918											
Admitted					7	8					15
Discharged					4	7					11
Transferred					1	1					2
Abandoned											
Died											
Remaining					2						2

Death rate percentage, 0 per cent.

VARICELLA DEPARTMENT.

Status.	Americans.		Europeans.		Filipinos.		Chinese.		Others.		Total.
	Male.	Female.	Male.	Female.	Male.	Female.	Male.	Female.	Male.	Female.	
Brought forward from 1918											
Admitted	1	3	1	2	136	55				1	199
Discharged	1	3	1	2	133	53				1	194
Transferred					2	1					3
Abandoned											
Died											
Remaining					1	1					2

Death rate percentage, 0 per cent.

VARIOLOID DEPARTMENT.

Status.	Americans.		Europeans.		Filipinos.		Chinese.		Others.		Total.
	Male.	Female.	Male.	Female.	Male.	Female.	Male.	Female.	Male.	Female.	
Brought forward from 1918											
Admitted	2				11	15			1		29
Discharged	2				10	15			1		28
Transferred					1						1
Abandoned											
Died											
Remaining											

Death rate percentage, 0 per cent.

GRIPPE DEPARTMENT.

Status.	Americans.		Europeans.		Filipinos.		Chinese.		Others.		Total.
	Male.	Female.	Male.	Female.	Male.	Female.	Male.	Female.	Male.	Female.	
Brought forward from 1918					1						1
Admitted					2	1					3
Discharged					3	1					4
Transferred											
Abandoned											
Remaining											

Death rate percentage, 0 per cent.

San Lazaro Hospital—Continued.

HERPES DEPARTMENT.

Status.	Americans.		Europeans.		Filipinos.		Chinese.		Others.		Total.
	Male.	Female.	Male.	Female.	Male.	Female.	Male.	Female.	Male.	Female.	
Brought forward from 1918.....											
Admitted.....					1						1
Discharged.....					1						1
Transferred.....											
Absconded.....											
Died.....											
Remaining.....											

Death rate percentage, 0 per cent.

BRONCHOPNEUMONIA DEPARTMENT.

Status.	Americans.		Europeans.		Filipinos.		Chinese.		Others.		Total.
	Male.	Female.	Male.	Female.	Male.	Female.	Male.	Female.	Male.	Female.	
Brought forward from 1918.....											
Admitted.....	1				5	3					9
Discharged.....	1				5	3					9
Transferred.....											
Absconded.....											
Died.....											
Remaining.....											

Death rate percentage, 0 per cent.

DYSPEPSIA DEPARTMENT.

Status.	Americans.		Europeans.		Filipinos.		Chinese.		Others.		Total.
	Male.	Female.	Male.	Female.	Male.	Female.	Male.	Female.	Male.	Female.	
Brought forward from 1918.....											
Admitted.....						1					1
Discharged.....						1					1
Transferred.....											
Absconded.....											
Died.....											
Remaining.....											

Death rate percentage, 0 per cent.

GASTRO-ENTERITIS, ACUTE DEPARTMENT.

Status.	Americans.		Europeans.		Filipinos.		Chinese.		Others.		Total.
	Male.	Female.	Male.	Female.	Male.	Female.	Male.	Female.	Male.	Female.	
Brought forward from 1918.....	1										1
Admitted.....					1						1
Discharged.....	1				1						2
Transferred.....											
Absconded.....											
Died.....											
Remaining.....											

Death rate percentage, 0 per cent.

San Lazaro Hospital—Continued.

PNEUMONIA DEPARTMENT.

Status.	Americans.		Europeans.		Filipinos.		Chinese.		Others.		Total.
	Male.	Female.	Male.	Female.	Male.	Female.	Male.	Female.	Male.	Female.	
Brought forward from 1918											
Admitted					2						2
Discharged					1						1
Transferred											
Absconded											
Died											
Remaining					1						a 1

Death rate percentage, 0 per cent.

REMARKS.—^a Pneumonia grippal.

SCABIES DEPARTMENT.

Status.	Americans.		Europeans.		Filipinos.		Chinese.		Others.		Total.
	Male.	Female.	Male.	Female.	Male.	Female.	Male.	Female.	Male.	Female.	
Brought forward from 1918											
Admitted					a 7	2					9
Discharged					6	1					7
Transferred					b 1						1
Absconded											
Died											
Remaining						1					1

Death rate percentage, 0 per cent.

REMARKS.—^a One impetigo. ^b Transferred as syphilis case.

YAWS DEPARTMENT.

Status.	Americans.		Europeans.		Filipinos.		Chinese.		Others.		Total.
	Male.	Female.	Male.	Female.	Male.	Female.	Male.	Female.	Male.	Female.	
Brought forward from 1918											
Admitted					1	2					3
Discharged					1	2					3
Transferred											
Absconded											
Died											
Remaining											

Death rate percentage, 0 per cent.

San Lazaro Hospital—Continued.

BOIL DEPARTMENT.

Status.	Americans.		Europeans.		Filipinos.		Chinese.		Others.		Total.
	Male.	Female.	Male.	Female.	Male.	Female.	Male.	Female.	Male.	Female.	
Brought forward from 1918											
Admitted						2					2
Discharged						1					1
Transferred											
Absconded											
Died						1					1
Remaining											

Death rate percentage, 50 per cent.

BRONCHITIS DEPARTMENT.

Status.	Americans.		Europeans.		Filipinos.		Chinese.		Others.		Total.
	Male.	Female.	Male.	Female.	Male.	Female.	Male.	Female.	Male.	Female.	
Brought forward from 1918											
Admitted						1					1
Discharged						1					1
Transferred											
Absconded											
Died											
Remaining											

Death rate percentage, 0 per cent.

ERYSIPELAS DEPARTMENT.

Status.	Americans.		Europeans.		Filipinos.		Chinese.		Others.		Total.
	Male.	Female.	Male.	Female.	Male.	Female.	Male.	Female.	Male.	Female.	
Brought forward from 1918											
Admitted						2					2
Discharged						2				1	3
Transferred											
Absconded											
Died						1					1
Remaining											

Death rate percentage, 25 per cent.

REMARKS.—^a Death due to anthrax (malignant pustule).

INSANE DEPARTMENT.

Status.	Americans.		Europeans.		Filipinos.		Chinese.		Others.		Total.
	Male.	Female.	Male.	Female.	Male.	Female.	Male.	Female.	Male.	Female.	
Brought forward from 1918	7		13	3	253	95	3		3	1	378
Admitted	18	1	3	1	153	62			4	1	246
Discharged	17	1	2	1	65	35	3		4	1	129
Transferred					37	9					46
Absconded					8						8
Died	1		1		32	3					37
Remaining	7		13	3	264	110	3		3	1	404

Death rate percentage, 5.929 per cent.

San Lazaro Hospital—Continued.

LEPER DEPARTMENT.

Status.	Americans.		Europeans.		Filipinos.		Chinese.		Others.		Total.
	Male.	Female.	Male.	Female.	Male.	Female.	Male.	Female.	Male.	Female.	
Brought forward from 1918					66	23					89
Admitted	5				161	84	4		1		255
Discharged					26	12	3				41
Transferred	3				107	59			1		170
Absconded					3	1					4
Died					6	1					7
Remaining	2				85	34	1				122

Death rate percentage, 2.034 per cent.

OLD PEOPLES' HOME DEPARTMENT.

Status.	Americans.		Europeans.		Filipinos.		Chinese.		Others.		Total.
	Male.	Female.	Male.	Female.	Male.	Female.	Male.	Female.	Male.	Female.	
Brought forward from 1918					18	19			1		38
Admitted	1			1	56	48					106
Discharged					13	16					29
Transferred					3	2					5
Absconded					1						1
Died	1				38	20					59
Remaining				1	19	29			1		50

Death rate percentage, 42.14 per cent.

TUBERCULOSIS DEPARTMENT.

Status.	Americans.		Europeans.		Filipinos.		Chinese.		Others.		Total.
	Male.	Female.	Male.	Female.	Male.	Female.	Male.	Female.	Male.	Female.	
Brought forward from 1918	1		1		35	28			3		68
Admitted	4		3		291	142	1		3		444
Discharged	3		2		152	90			3		250
Transferred					1	3					4
Absconded					1						1
Died	1		1		142	65	1		3		213
Remaining	1		1		30	12					44

Death rate percentage, 41.21 per cent.

FREE DISPENSARY VENEREAL CLINIC OF SAN LAZARO HOSPITAL.

[From March to December 31, 1919.]

SYPHILIS.

Nationality.	Age.						Sex.		Civil status.				Place.			Occupation.					Stage.		Profes- sional.		
	1-12 years.	12-16 years.	16-30 years.	30-40 years.	40-50 years.	50 and over.	Male.	Female.	Single.	Married.	Divorced.	Widowed.	City.	Town.	Outside of Phil- ippines.	Clerks.	Laborers.	Housekeepers.	Housewives.	Teachers.	Miscellaneous.	First.		Second.	Male.	Female.
Filipinos	1	12	3				14	2	5	9		2	14		2	3	3	2			8	12	4		
Americans																									
Europeans																									
Total	1	12	3				14	2	5	9		2	14		2	3	3	2			8	12	4		

GONORRHEA.

Nationality.	Age.						Sex.				Civil status.			Place.			Occupation.						Stage.	Profes- sional.	
	1-12 years.	12-16 years.	16-30 years.	30-40 years.	40-50 years.	50 and over.	Male.	Female.	Single.	Married.	Divorced.	Widowed.	City.	Town.	Outside of Phil- ippines.	Clerks.	Laborers.	Housekeepers.	Housewives.	Teachers.	Miscellaneous.	Acute.	Chronic.	Male.	Female.
Filipinos	7	2	98	48	20	2	93	84	50	115	3	5	154	14	9	8	43	25	40	5	56	143	34	2	
Americans			2				2		2												2	1			
Europeans			2						2				1		1										
Total	7	2	102	48	20	2	97	84	54	115	3	9	155	14	12	8	43	25	40	5	60	144	37		

TOTAL INFECTED.

Filipinos	7	3	110	51	20	2	107	86	55	124	3	11	168	14	11	11	46	25	42	5	64	155	38		
Americans			2				2		2												2		2		
Europeans			2										1		1									1	
Total	7	3	114	51	20	2	111	86	59	134	3	11	169	14	14	11	46	25	42	5	68	156	41		

NUMBER OF PRESCRIPTIONS DISPENSED AT THE PHARMACY OF SAN LAZARO HOSPITAL.

Number of charity prescriptions.....	3,072
Number of hospital prescriptions.....	1,130
Total number of prescriptions.....	4,202
Average number of prescriptions per day.....	135

NOTE.—Besides these prescriptions filled, plenty of medicines were sent to the different wards of the hospital during the year. Bottles have been every day filled with different pharmaceutical preparations for the different wards. Prescriptions for the hospital patients were often times asked to be refilled.

SPECIMENS EXAMINED BY THE SAN LAZARO LABORATORY.

	Positive.	Negative.	Total.
Faeces:			
Cholera vibrio.....	254	1,632	1,886
Bacillus dysentery.....	5	104	106
Amoeba.....	5	38	43
Intestinal parasites.....	42	42	66
Smears from urethra and cervix:			
Gonococcus.....	197	163	360
Blood:			
Widal test:—			
Typhoid.....	10	19	29
Paratyphoid.....	1	27	28
Leprosy bacillus.....	96	30	126
Malaria.....	1	4	5
Blood count.....			26
Sputum:			
Tubercle bacillus.....	242	204	446
Urine:			
Routine.....			84

SPECIMENS SENT TO THE BUREAU OF SCIENCE.

	Positive.	Negative
Faeces:		
Cholera vibrio.....	2,136	7,484
Bacillus dysentery.....	8	1,539
Amoeba.....	9	3,182
Ascaris.....	456	2,786
Trichuris.....	373	2,819
Hookworm.....	98	3,102
Flagellates.....	4	2,066
Throat culture for diphtheria:		
Bacillus diphtheriae.....	48	607
Smears from urethra and cervix:		
Gonococcus.....	21	26
Blood:		
Widal test:		
Typhoid.....	6	20
Paratyphoid.....		26
Wassermann.....	33	42
Sputum:		
Tubercle bacillus.....	31	44

SAN LAZARO HOSPITAL.
MORGUE AND CREMATORY DEPARTMENT.

Disposition.	Number of bodies.
Remaining from last year.....	3
Received:	
Abdominal tuberculosis.....	6
Accidental drowning.....	1
Accidents of pregnancy.....	1
Acute endocarditis.....	2
Acute nephritis.....	1
Alcoholism (acute or chronic).....	2
Anaemia, chlorosis.....	1
Anthrax.....	1
Beriberi.....	1
Bright's disease.....	4
Bronchopneumonia.....	14
Cancer and other malignant tumors of the buccal cavity.....	1
Cancer and other malignant tumors of the stomach, liver.....	1
Causes of death not specified or ill-defined.....	3
Cholera.....	375
Cholera, probable.....	31
Congenital debility.....	2
Diabetes.....	1
Diarrhoea and enteritis.....	6
Diphtheria.....	23
Diseases of the arteries, atheroma, aneurysm, etc.....	2
Disseminated tuberculosis.....	1
Dysentery.....	22
General haemorrhage, apoplexy.....	1
General paralysis of the insane.....	2
Homicide by cutting or piercing instruments.....	1
Influenza.....	1
Intestinal parasites.....	1
Leuchaemia.....	1
Leprosy.....	6
Measles.....	1
Organic diseases of the heart.....	6
Other diseases of the digestive system (cancer and tuberculosis excepted).....	1
Other diseases of the kidneys and annexa.....	1
Other diseases of the stomach (cancer excepted).....	1
Paralysis without specified cause.....	5
Pericarditis.....	1
Pneumonia.....	3
Premature birth.....	2
Puerperal haemorrhage.....	1
Purulent infection and septicaemia.....	1
Rabies.....	1
Salpingitis and other diseases of the female genital organs.....	1
Senility.....	45
Simple meningitis.....	2
Simple pericarditis (nonpuerperal).....	1
Smallpox.....	55
Stillbirths.....	9
Tetanus.....	27
Tuberculosis of the lungs.....	236
Typhoid fever.....	8
Total	962
Dropped:	
Buried by Bureau of Prisons.....	2
Buried by Chinese cemetery.....	3
Buried by city.....	439
Buried by family.....	376
Cremated.....	56
Turned over to family.....	70
Turned over to Funeraria Nacional.....	16
Total	962
Number of autopsies held.....	378

ERRATA

1. Page 4, line 13, should read "for 1908 and 1919".
2. In table, page 4, total deaths for Manila in 1919 should be 9,169 (page 434), instead of 7,814.
3. Table on page 10 should be:
 - Provinces, deaths from smallpox, 1918—14,466, not 14,092.
 - Provinces, deaths from smallpox, 1919—45,873, not 43,294.
 - Provinces, cases from smallpox, 1919—93,380, not 60,612.
 - Mindanao and Sulu—cases, smallpox, 1919—5,840, not 4,511.
 - Mindanao and Sulu—deaths, smallpox, 1919—1,466, not 1,075.
4. Line 7, page 32, should be "Complaints by word of mouth."
5. Under treatment on page 35, the injections were given either separately or together depending on the reaction of the patient.
6. In line 2, page 37, "as" should be "and."
7. Line 6, page 48, should be "Tubercle sensitized vaccine."
8. The paragraph on Mortality, page 53, should read:
 - "Mortality rate computed on the number of prisoners in Bilibid Prison only was 17.10 per 1,000. Of this 7.60 per cent is from general diseases; 9.50 per cent from pulmonary tuberculosis."
 - "Mortality rate computed on the number of prisoners in Bilibid Prison and outside stations (10,091 prisoners) was 18.70 per cent."
9. Last line, page 53, should be "Formerly all male cases of filaria."
10. Page 56, under dysentery should read:
 - "During the year there were 4 cases of bacillary dysentery with 2 deaths; 137 cases showing amoeba coli in stools: 5 cases of entamoebic dysentery and 62 cases of clinical dysentery whose stools were not examined."
11. Line 2, page 58, should read, "that pregnant women serving short term sentence be sent elsewhere, and not in Bilibid Prison, for punishment."
12. Page 79, table for vaccinations, 53.33 refers to percentage of "positives," not under "inspections."
13. Page 82, second chart on page, should read "cholera vibrio carriers found during the year 1919, with not less than two positives before discharge."
 - In the last column of the table the word "second" should be "last."
14. Page 82, in third table should read "cholera vibrio carriers found during the year 1919 with not less than two positives before discharge."
15. Page 84, cases with not less than two positives before discharge.
16. Page 85, cases with not less than two positives before discharge.
17. Page 86, in the table some cases and carriers were not treated.
18. Page 87, table for dysentery incidence for 1917 should be 2.92 (not 3.035); for 1918, should be 2.79 (not 2.983) and for 1919, should be 2.59 (not 7.582).

19. Page 88, paragraph second, should read "with the exception of 1918," not "1916."
20. Page 93, table for Clean-up Week, December, 1919. Under Column B, health district 5, Tondo, should be 9,694, instead of 919.
21. Line 6, page 104, should be "8,953,818 people."
22. Line 2, page 131, should be "P0.20 per capita."
23. Page 141, rate of deaths without medical attendance, column 12, should be 97.80 for Ilocos Norte, instead of 37.80.
24. Page 142, total death rate for 1916, should be 23.30 instead of 30, (column 8).
25. Line 10, page 163, should read "in 1916 and 1917," not 1918.
26. Page 175, column 14 of table, total should be 41,101, instead of 4,101.
27. Line 25, page 176, should be "emunctories" instead of "agents."
28. Last paragraph, page 181, should read "fomites" instead of "vomits."
29. Line 19, page 187, should read "Balkans and Egypt in the past years" (not "year").
30. Second line, under "Leprosy," page 201, should read "collected by provinces and by years."
31. Lines 4, 5 and 6, page 225, should read "therefore it is not possible to explain why having attended more parturient women in 1919 than 1918, deaths attributed to puerperal state increased in 1919 over 1918."
32. Under XX should be "Home Gardens" instead of "Conclusion," page 243.
33. Line 2, page 360, should be "national," instead of "natural."
34. Line 21, page 381, should read "constantly increasing."
35. Page 418, project 444, refers to 1918, smallpox, city of Manila.
36. Table on page 456, under "Unknown" for "male spaniards," total is one (1) not 11 (eleven).

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